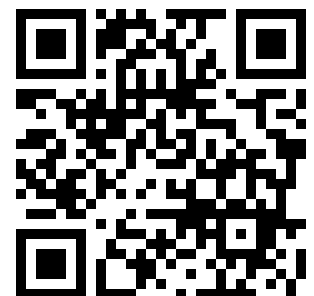

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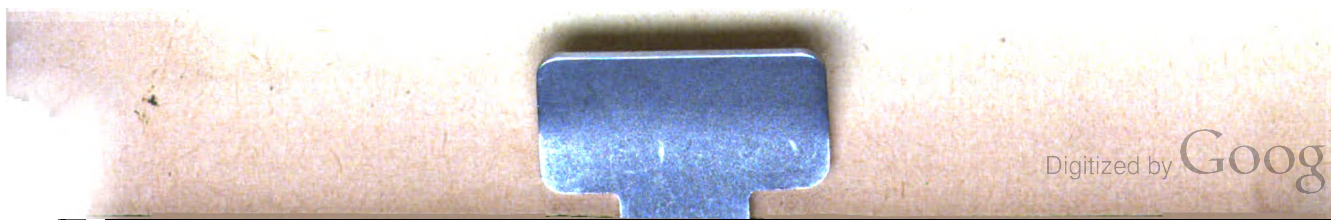
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AMERICAN GARAGE & AUTO DEALER



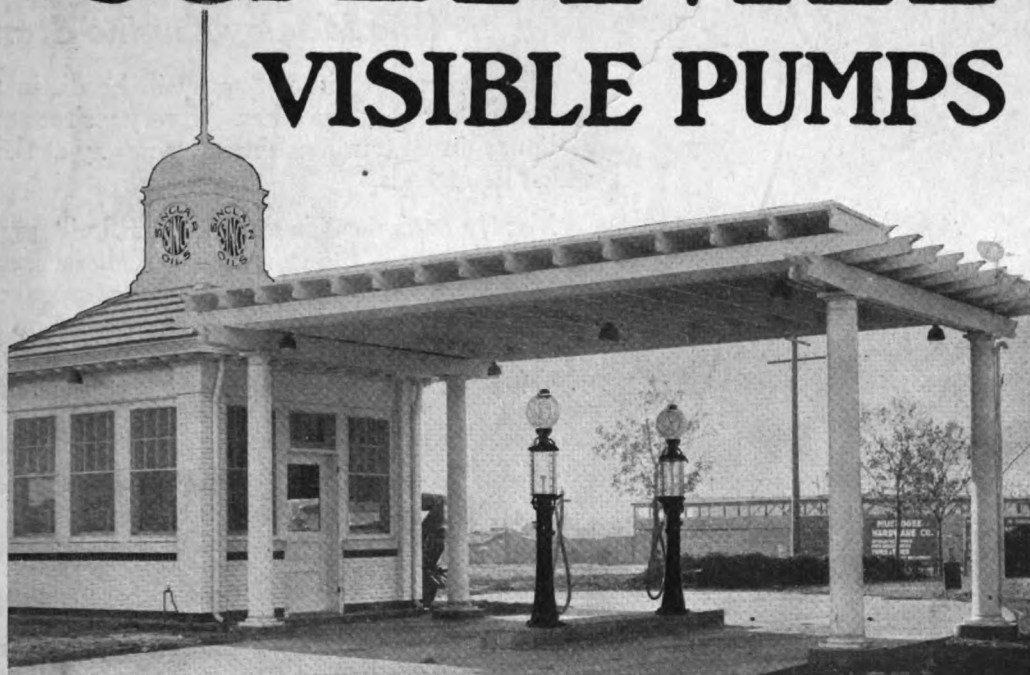
Volume 9
Number 1

CHICAGO

JANUARY, 1918

\$1.00 Per
Year

GUARANTEE VISIBLE PUMPS



FOR 1918 BUSINESS

War conditions will impose many new problems during this year. Economy has become a custom with the American people.

Automobile owners wisely are watching their dollars.

Visibility in gasoline and oil pumps is actually demanded today. It assures full measure. That means money saved to the motoring public.

Are you equipped to meet this demand?

See Our Exhibit at the Chicago Show

HEPBURN WALKER

Distributor

GUARANTEE LIQUID MEASURE COMPANY

Farmers Bank Bldg.

Digitized by Google Pittsburgh, Pa.

These Money Makers For Prizes at the Auto Shows

EVERY Garage Man visiting our exhibit at either the New York or Chicago Show will be given an opportunity to get some of the famous Manley Garage Machines *free*.

We will conduct a contest at both Shows and will give away four of our most popular machines as prizes to the winners. These prizes will be:

One Manley 22-ton Press

One Manley 1-ton Portable Crane

One Manley 2-tank Oil Service

One Manley Engine Stand

The contest at either Show will be distinct from the contest held at the other. Every visitor can have a chance on all four machines given away at the Show which he attends.*

Manley equipment is designed and built especially for garage service and conditions. These specialties have been proven great time and labor savers for garage work in all parts of the country. You should be interested in seeing this line and learning how it will enable you to make money in your business.

Our exhibits will be located as follows:

Chicago Show — Space 10-D Coliseum Basement.

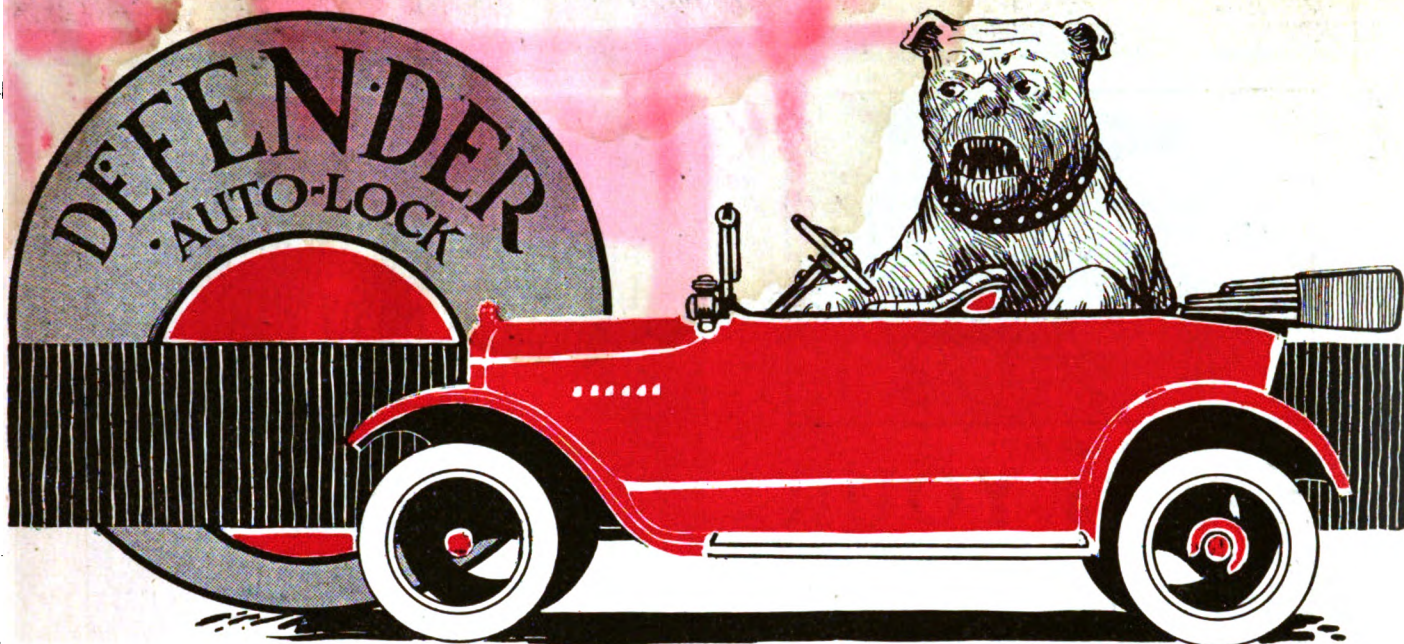
New York Show — 4th Floor Grand Central Palace, Space D 198.

Look us up and remember you may be lucky enough to win the very machine you like best.

United Engine & Mfg. Co.
HANOVER, PENNA.



Four Manley Machines To Winners at Each Show



The DEFENDER Auto Lock For Fords Keeps Cars Where Owners Put Them

If every Ford owner could leave a big, well-trained bull dog in his car, for protection at the curb, automobile thieves would leave Ford cars pretty well alone.

The DEFENDER Auto Lock has the same effect on thieves. It sticks on the job like a bull dog—and it won't let go.

If it is possible to force a DEFENDER Lock—**so far one has never been forced**—it would take even the most experienced crook so long to do it, that he would be caught before he could get away.

Thieves are looking for quick get-aways. **They steal cars that are not adequately locked.** A DEFENDER Lock is practically a guarantee that no thief will **try** to steal the car. It is more than a guarantee that **he can't do it** if he does try.

Five Big Reasons Why Defender Lock Sells

- 1—Locks and protects coil units with hardened steel band. (Patent pending.)
- 2—A beautiful, polished, solid aluminum casing; locks over switch. (Patent pending.)
- 3—Operates against the ignition by special grounding device. (Patent pending.)
- 4—Guaranteed for the entire life of car, and backed by a company fulfilling every sound business principle to the last ditch.
- 5—Recognized and used as a standard of perfection by insurance underwriters and saves 15% on insurance.

DEALERS—Write us for free illustrated literature and complete details. ALL JOBBERS.
DEFENDER AUTO LOCKS SELL FOR SAFETY

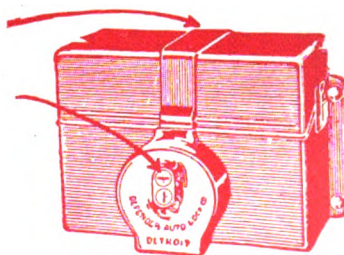
DEFENDER AUTO LOCK COMPANY
5th Floor, Marquette Bldg. Detroit, Mich.

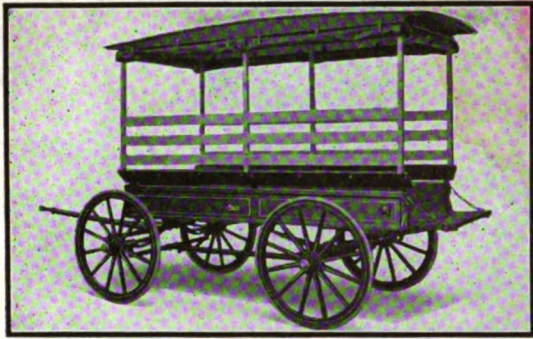
Price Complete Only

\$3.50

The Double Lock
That
Locks the Box
and
Locks the Casing
Covering the Switch

PATENT
APPLIED FOR





Now is YOUR Opportunity to sell **MIAMI** **TRAILERS!**

The demand for trailers during 1918 will break all previous records. The utility and economy of the MIAMI TRAILER is now generally recognized.

Trailers are a big factor in the economy movement which is sweeping the country.

There is an established demand in your community for the MIAMI TRAILER. Every firm that uses motor trucks, automobiles, or horses and wagons is a prospect.

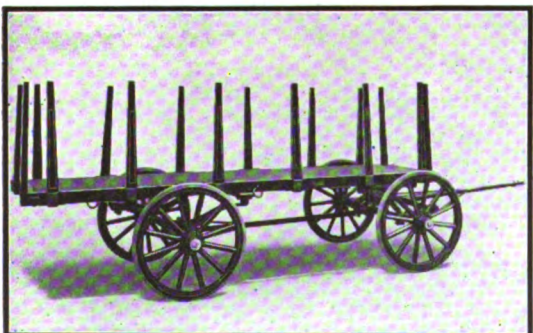
A trailer will often save the cost of an extra truck or car, and will effect tremendous savings on hauling.

MIAMI TRAILERS are made in twelve styles. High grade materials and substantial construction insure long, dependable service under all conditions.

DEALERS--Get this agency. Cash in on the big 1918 demand for trailers.

Write today for literature, our trade offer, and sales plan.

MIAMI TRAILER CO.
TROY, OHIO
(MIAMI COUNTY)



CUT IN AUTO MAKING BROUGHT ON BY WAR

Curtailment in the Manufacture of Motor Cars Predicted by Dealers.

SHORTAGE IN LABOR CITED

BY LAMBERT G. SULLIVAN.

Considerable curtailment in the manufacture of motor cars in 1918 is predicted by a number of prominent automobile men as the result of war conditions. Several of the smaller manufacturers already have been forced to cut down their production and only a few of the larger manufacturers have shown a gain for 1917 over 1916. A shortage in the labor and material market rather than a slackened demand has been the cause of the curtailment.

Boost for the Used Cars.

With a probable shortage in new cars, used car sales probably will be boosted.

(Reproduced from
CHICAGO DAILY NEWS
October 30-1917)

**You do not
need to be
disappointed**



1102 Detroit All Season Weatherproof Tops Sold by one dealer in three months



HE saw an advertisement in a trade magazine. He clipped the coupon. We sent a representative to him. With considerable reluctance he signed up for 100 Detroit Convertible Weatherproof Tops. That was two years ago.

THEN this dealer—with territory in a western state of less than two and one-half million—did just what any live dealer can do. What you can do. He analyzed the Detroit Convertible Weatherproof Top. He studied it from its splendid oak and steel frame to its lasting weatherproof covering and hardy flexible doors. He learned how to install the top, how to remove the side panels, and show

his customers that "The Top at the Top" is just as fine an article for summer as for winter use. He *convinced himself* that he had a matchless top for his trade. He was sure of himself—proud of his line.

THEN he organized his territory. How did he do this? Ask him: We will give you his address on request. At any rate, *he sold tops*. The first hundred gone—in came repeat orders—ten—thirty—a hundred. Orders—orders—by letter, by special delivery, by wire. In December came the climax—1102 tops sold by this dealer since September 1. He's going to Florida now and rest.

If you're a live dealer—a capable organizer—we want you in our organization. Detroit Convertible Weatherproof Tops are in demand. Motor car owners ask for the "Top at the Top."

Your territory may be unallotted. We supply a coupon for your convenience in writing us for dealer's terms and sales plan.



Detroit Weatherproof Body Co.
Pontiac, Mich.



RETAIL PRICE LIST

For the present we manufacture tops for the following cars only:

Ford Touring	\$ 87.50
Overland Model 83-5 Pass	115.00
Buick D-45 Light 6	140.00
Chalmers 6-30-5 Pass. (including rain vision floor to be fitted to standard windshield)	97.50
Chandler 1917, 1918 (including 3 piece built-in windshield)	185.00
Hudson Super Six Touring (including 3 piece built-in windshield)	190.00
Chevrolet Model Four-ninety	110.00
Maxwell Roadster	130.00
Maxwell Touring	145.00

Detroit Weatherproof Body Co.,
703 Saginaw St.,
Pontiac, Michigan.

Without obligation on my part, kindly send me dealer's terms, sales plan, and full information relative to **The Top at the Top**.

Name

Address



Cut
101
Pump
(Patd)

Are Your Customers Boosters?

Imagine how your business would increase if your customers boosted your gasoline and oil. American equipment, honest measure, quick service, clean gasoline with "pep", lubricating oil—smooth and free from dirt—are certain to secure the approbation of your customers and cause them to "boost."

THE AMERICAN Gasoline and Lubricating Oil Outfits

are designed to satisfy your needs.

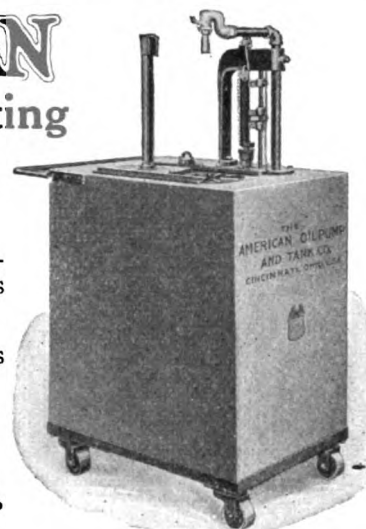
American Curb Pump (Cut 101) is double-acting and discharges gasoline in a continuous stream at the rate of 14 gallons per minute.

American Portable Lubricating Outfit is indispensable for delivering oil at the curb.

Write for bulletins giving complete information, prices, etc.

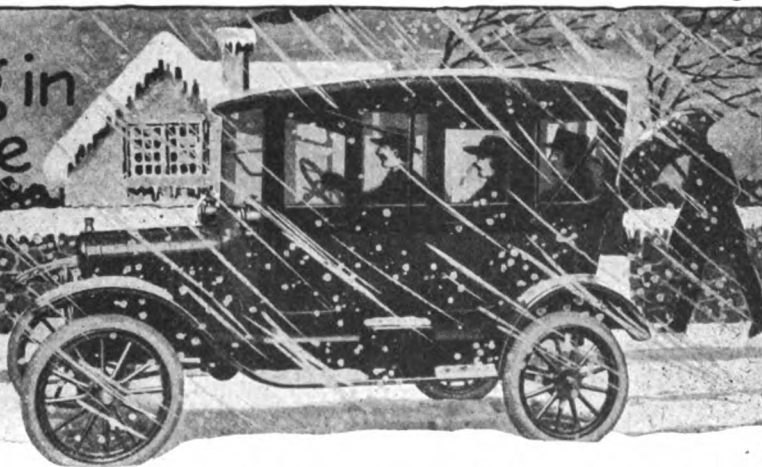
The American Oil Pump & Tank Co.

CINCINNATI, OHIO



Cut No. 23

Make Ford driving in
Winter a pleasure
with the **MASTER**
WINTER ENCLOSURE
\$22.50

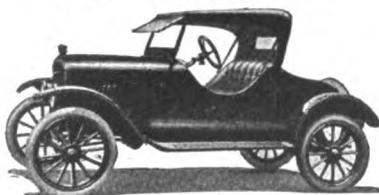


A Practical Enclosure at a Reasonable Price

MASTER Bodies Make Fords Satisfy

The Master sport-roadster body will convert any Ford chassis into an enviable car embodying the last word in beauty and comfort.

\$145.00 Completely Equipped



With the Master Enclosure, a Ford car can be instantly converted into a cozy and comfortable Winter car. No longer is it necessary to invest a big price in a Winter body or a special top—the master Enclosure keeps out the Winter, and saves many dollars' investment.

Master Enclosures can be attached in a few minutes by any car owner. They are constructed of the very best material—extra heavy weather-proof rubber duck—four large celluloid windows on each side. The doors open up with the doors of the body. Absolutely weather-proof—nothing to get loose or rattle. A Master enclosure will last many winters.

DEALERS AND JOBBERS

The Master Enclosure sells on sight. Stock a supply of Enclosures for the demand you are bound to have. Nothing on the market at anywhere near the price. Stock them NOW—we can make immediate delivery for a limited time only.

MASTER BODY COMPANY

570 Franklin Street

Detroit, Mich.



This is "A Most Prosperous New Year" for garage men who handle Inlands. They are ringing out old piston rings and putting in hundreds of new Inlands.

The dealer who handles Inlands has *three special* advantages that no other piston ring proposition offers. He knows that the Inland is *mechanically* perfect — absolutely gas-tight and strongest and most durable.

He *knows* he can get *more* car owners to install Inlands, because with Inlands he can save \$5 to \$10 per set over any other type of gas-tight piston ring.

He *knows* that Inland's big advertising is convincing thousands of car owners of the economy of installing gas-tight piston rings and of the *double* saving that Inlands offer. If you are not an Inland dealer now make a New Year's resolution to handle Inlands, and get the full business building benefit of Inland advantages and Inland advertising.

INLAND

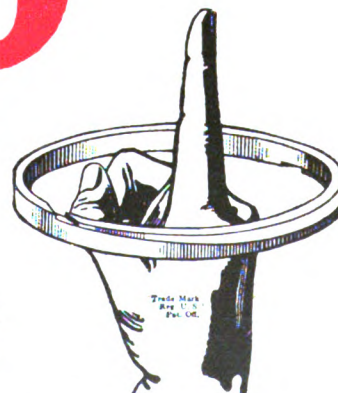
1 PIECE PISTON RING

Strike while the iron is hot.

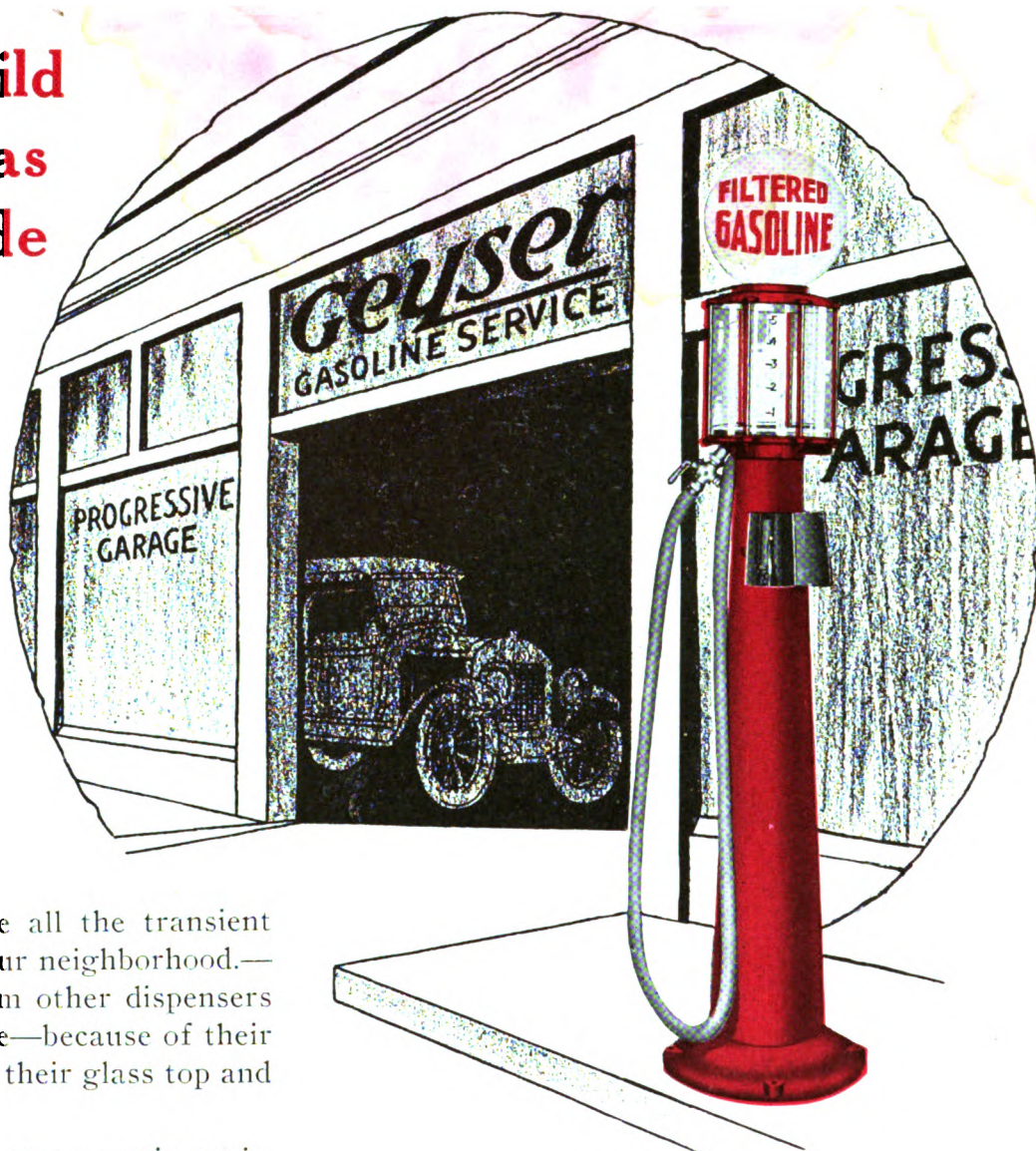
Send today for *complete free material* which is specially prepared for your local use. It will link your place right up with the car owners in your vicinity and bring you their over-hauling business. Write today.

Ask your jobber for terms to you on Inlands.

Inland Machine Works, 817 Mound Street, St. Louis, U. S. A.



You can build
up a Big Gas
and Oil Trade
with a
GEYSER
VISIBLE
GASOLINE
DISPENSER



With one of these dispensers in front of your garage you are in a position to secure all the transient gasoline business in your neighborhood.—They are different from other dispensers and far more attractive—because of their distinctive appearance, their glass top and electric lighting effect.

The time taken to serve a car is cut in two. The labor of operating is reduced to practically nothing. All hand pumping is eliminated.

THE GEYSER Pump Keeps Your Customer's Confidence

There is nothing mysterious about this gasoline dispenser. It has no complicated clock works or revolving hands to confuse the motorist and he **sees** exactly what he is paying for.

Install a Geyser Visible Gasoline Dispenser and not only save money, but assure yourself and customers against loss through inaccurate measurement.

MONEY-BACK GUARANTEE

So positive are we that the Geyser will meet your requirements, all outfits are sold with a written money-back guarantee.

The Geyser Visible Gasoline Dispenser sells for \$125 under our liberal money-back guarantee, that if after a fair test you are not satisfied, the money paid will be refunded.

THE VISIBLE GASOLINE DISPENSER CO.

422 First Avenue, Pittsburg, Pa.

AMERICAN GARAGE & AUTO DEALER

Published Monthly

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TABLE OF CONTENTS

EDITORIAL

Talk Economy—Sell Economical Devices.....	20
Attend, Support and Promote Shows.....	20
Cleanliness Is Next to the Cash Register.....	20
Fix Your Used Cars	20
Have a Prospect List.....	22

GENERAL

Passenger Car Men Turn to Trucks.....	11 & 16
Chicago's War Time Show Expected to Break Records	12-13
New Liberty Sedan	13
Motor Cars Big Factor in Transportation Field.....	14
Secretary Smyth Exposes National Automobile Assn.	14
Gasoline Scarcity Scare Now Proved Groundless.....	16
Window Hints as Sales Aids.....	18
Newark Tradesmen Make Joint Advertising Effort..	22 & 24
Cassidy Firm to Sell Rajah Spark Plug Line.....	22
Sell Tires by Telephone—One Newark Dealer Does..	28
Electric Light and Starter for Grant Truck Models...	30
Jersey Tradesmen Want Business on Cash Basis...	34
"Garage Girl" Advises Others to Study Task.....	38
Muskegon a Motor Center	38
Cleveland Tractor Designed for Farm and Industrial Use	40
Benjamin Gotfredson Is New Saxon President.....	40
Day and Night Signs Reproduce Trade Marks.....	40
Trade Thrives in Omaha	40

DEPARTMENTS

How to Make the Shop Pay.....	26
Mechanical and Engineering Problems.....	34
Welding, Cutting and Brazing	36
The Law and the Garage Trade.....	38
A. A. G. O. and Its Activities.....	42
Accessories and Garage Equipment.....	44-46
Buyers' Reference	60
Index to Advertisers	61



"NORMA" BALL BEARINGS

(Patented)

The "best" car—the "best" truck—the "best" engine—they may all be condemned, may be rendered useless, by ignition or lighting apparatus which fails to measure up to their standards of quality. A good car, a good truck, must be consistently good—good in every minute detail, serviceable in every feature which makes for serviceability.

The standardization of all high-grade magnetos and lighting generators on "NORMA" Ball Bearings is an example of engineering consistency. The makers of these accessories, seeking maximum serviceability in their product, have availed themselves of the proved "NORMA" serviceability.

**Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped**

THE NORMA COMPANY OF AMERICA
1790 BROADWAY NEW YORK

Ball, Roller, Thrust and Combination Bearings.



The MAXWELL has standardized PASCO Wire Wheels

on the new Sedan Model—convincing evidence that PASCO'S Exclusive features are winning the attention of the progressive car manufacturer. And the manufacturer knows much more about wire wheels in general than does the car owner.

The Four exclusive features of the PASCO are—four series method of spoke lacing and rim punching—indestructible hub cap—ingenious safe locking device—inner hub, making wheels interchangeable.

FORD and MAXWELL pleasure and delivery cars are being equipped with PASCO wheels in increasing numbers.

Set of 5 wheels complete in black, for Fords \$75.00—for Maxwells, in white or black, \$100.00. Other colors \$5.00 extra.

DEALERS: Write for sales proposition.

National Wire Wheel Works, Inc., Dept. G, Geneva, N. Y.



AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

THE NEW YORK
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ASTOR, LENOX AND
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Vol. IX. No. 1

New York — CHICAGO — Detroit

January, 1918

Passenger Car Men Turn to Trucks

Commercial Motor Vehicle Opportunities for Dealers in Older Branch of Business Forcefully Presented by Executive of Big Manufacturing Concern

By J. C. AYERS,
Vice President,
Denby Motor Truck Company.

AT THIS time, many automobile tradesmen who have never seriously considered it before, are turning to the truck business. This is particularly true of dealers who heretofore have confined their efforts to the sale and maintenance of passenger cars.

This attitude signifies an awakening throughout the industry to the wonderful opportunities that a good truck agency offers. The business has made wonderful strides in the last two or three years, but many of the best dealers of the country were so busy with their passenger car business, which they had spent years in building up, that they had not realized the position or magnitude of the commercial motor vehicle industry.

The slowing down of the demand and production in the older branch of the motor business caused these men to look upon the commercial car more seriously. They found the dealers who had looked ahead and kept in closer touch with the trend of the industry, had a solid, profitable business that was growing rapidly, while theirs was shrinking.

The truck business offers a better field for the retail dealer and salesman than the passenger car, not only now but in the future. In the first place, it does not fluctuate with the

seasons or the condition of business in general, as does the sale of passenger cars. The truck makers early recognized the evils of the "annual model," and got away from it. There are, therefore, no artificial buying seasons created. Every month is a good truck month. True, there are many lines of business that buy at a certain

have to make up for the losses of another. Instead of an organization to take care of the rush business, which must be idle in the dull months, or a varying force, with the necessity of "breaking in" new men, at a loss to the firm, the truck dealer has the same force actively engaged in productive work the year round.

The demand for trucks is getting greater all the time, whereas the sale of passenger cars is becoming less easy every year. Motor trucks are not only an economy in business but have taken their rightful place as an absolute necessity. Business expansion requires motor trucks and business economy demands motor trucks.

The necessities of war have enlarged the field of the motor truck. The inability of the railroads to meet the demands of the government for rapid hauling have already caused restrictions to be put on general freight hauling, and these restrictions will undoubtedly be greatly increased. The only alternative is the general use of the highways for a great part of the hauling heretofore done by rail.

Many businesses that have used horse haulage will have to turn to trucks, as greater output is demanded. Twenty-four hours a day will be the rule in thousands of factories making war materials, where eight hours has been the rule. This is beyond the limitations of horse-flesh.

(Continued on page 16).



J. C. AYERS.

season, but these are different for the different lines, so that at all times there are more prospects ready for immediate purchase than a dealer can possibly call on.

Turnover Is Continuous.

The natural result of this is a continuous, even turnover, that makes for low overhead, as one month does not

Chicago's War Time Show Expected to Break Records

Attendance of Dealers Estimated at 3,000, With
300,000 as Total of Visitors

Chicago's first war-time motor vehicle show, the Eighteenth Annual National, that will be held in the Coliseum and First Regiment Armory, January 26 to February 2, will be featured by a patriotic scheme of decoration. American flags and those of the Allies will be used. There is every indication that the Western automobile exhibition will, as usual, surpass the just-held Eastern function at New York as it has every year since their inception.

Predictions that war conditions and the much discussed need of economy on the part of all Americans would only serve to enhance the interest in the New York show were more than realized. Not only were all former attendance records bettered at the Grand Central Palace but the exhib-

itors—car and accessory makers alike—all reported great success in a business way.

More dealers than ever before are expected to visit the Coliseum and First Regiment Armory. Automobile tradesmen who have formerly not availed themselves of their opportu-

CARS TO BE DISPLAYED.

Abbott, Allen, Anderson, Apperson, Auburn, Austin.
Baker Electric, Briscoe, Buick.
Cadillac, Case, Chalmers, Chandler, Chevrolet, Cole, Columbia, Comet, Crow-Elkhart.
Davis, Detroit Electric, Dixie Flyer, Doble Detroit, Dodge Brothers, Dorris, Dort.
Elgin, Elcar, Empire.
Fiat, Franklin.
Glide, Grant.
Hackett, Hal, Harroun, Haynes, Hollier, Hudson, Hupmobile.
Inter-State.
Jackson, Jordan.
King, Kissel-Kar, Kline Kar.
Lexington, Liberty.
Maibohm, Marmon, McFarlan, Maxwell, Mercer, Milburn, Mitchell, Moline-Knight, Monitor, Monroe, Moon, Moore.
Nash, National.
Oakland, Ohio, Oldsmobile, Olympian, Overland, Owen Magnetic.
Packard, Paige, Pan-American, Paterson, Peerless, Pierce-Arrow, Premier.
Rauch & Lang, Regal, Reo, Roamer.
Saxon, Scripps-Booth, Standard, Stanley, Stearns Knight, Stephens, Studebaker, Stutz.
Templar.
Velie.
Westcott, Willys-Knight, Winton, Woods.



Coliseum—Home of Chicago Automobile Show.

ity of seeing the show will visit it this year, if only to examine the accessory displays. More and more are the shrewd garage men and car dealers going into the business of selling accessories or are making plans to enlarge already existing accessory departments.

It is estimated that the dealer attendance will be greater than 3,000. The hotels report a big demand for accommodations during show week and the total number of visitors is expected to exceed 300,000 persons.

More than 400 vehicles will be displayed—ranging in price from a small

car selling in the neighborhood of \$500 up to big, luxurious closed vehicles priced at a figure that would buy a score of the smaller ones. So many accessory firms asked Manager S. A. Miles for space that he could not find room for all of them and was compelled to refuse scores of applicants.

ACCESSORY EXHIBITORS.

A-B-C Starter Co., American Bronze Co., American Ever Ready Works, Auto Compressor Co., Becker Brothers, Benford Mfg. Co., Brown-Lipe-Chapin Co., Brown-Lipe Gear Co., Brunner Mfg. Co., Buda Co., Byrne Kingston & Co.,
Champion Ignition Co., Clark Equipment Co., Century-Plainfield Tire Co., Continental Motors Co., Corbin Screw Corp., Corcoran-Victor Co., Corning Glass Works, Cowles & Co.,
Dann Products Co., Detroit Pressed Steel Co., Dixon Crucible Co., Doehler Die-Casting Co.,
E. A. Laboratories, Inc., Eclipse Machine Co., Edison Storage Battery Co., Electric Storage Battery Co.,
Findelsen & Kropf Mfg. Co.,
Gabriel Mfg. Co., Gemco Mfg. Co., General Electric Co., Gould Storage Battery Co., Gray & Davis, Inc.,
L. P. Halladay Co., Harrison Radiator Corp., Edward V. Hartford, Inc., Robert H. Hassler, Hayes Mfg. Co., Hayes Wheel Co., Heinze Electric Co.,
Imperial Brass Mfg. Co.,
Kellogg Mfg. Co., Atwater Kent Mfg. Works, Klaxon Co., Koko Electric Co.,
Lipman Air Appliance Co.,
F. W. Mann Co., Merchant & Evans Co., Metal Stamping Co.,
A. R. Mosler & Co., Moto-Meter Co., Inc.,
National Carbon Co., New York Coll Co.,
Oakes Co.,
Pantasote Co., Parker Rust Proof Co. of America, Parry Mfg. Co., G. Piel Co.,
Rowe Calk Co.,
Schrader's Son, Inc., Shakespeare Co., C. A. Shaler Co., Sparks-Withington Co., Spiltdorf Electrical Co., Standard Welding Co., Standard Woven Fabric Co., Stewart-Warner Speedometer Corp., Stromberg Motor Devices Co.,
Universal Shock Eliminator, Inc.,
Vacuum Oil Co., Van Sicklen Co., Veeder Mfg. Co., Vesta Accumulator Co., Voorhees Rubber Mfg. Co.

Waltham Watch Co., Waukesha Motor Co., West Side Foundry Co., Wheeler-Schebler Carburetor Co., Inc., Willard Storage Battery Co., Wilson & Co., Woodworth Mfg. Corp.

Anderson Forge & Machine Co., Du Bois Plaston Ring Co., Inc., Miller Transmission Co., Phillips-Brinton Co., Rand Mfg. Co., Inc., Rex Mfg. Co., Taft-Pierce Mfg. Co., Warner Lenz Co., C. R. Willson Body Co., New Era Spring & Specialty Co.

Advance Automobile Accessories Corp., Amazon Rubber Co., American Sleeve-Valve Motor Co., Armstrong Cork Co., Auto Gear Co., Inc., Automatic Transmission Co., Inc., Automobile Devices Co., Brewer Titchener Corp., Connecticut Clock Co., Curtis Pneumatic Machinery Co.

Detroit Kerosene Carburetor Co., Eastern Rubber Co., Essenkay Products Co., Eureka Rim Compressor, Inc., Fulton Co., G. L. W. Spring Oiler Co., H. & D., Inc., Holt-Welles Co., Inc., Humboldt Machine & Stamping Co., Improved Gauge Mfg. Co., Inland Machine Works, Interstate Electric Co., J. & S. Tonneau Shield Co., Jiffy Jack Co., Johnson Automobile Lock Co.

K. W. Ignition Co., Lane Bros. Co., L. Lawrence & Co., Lubriko Co., McQuay Norris Mfg. Co., Arthur C. Mason, Inc., Merrimack Mfg. Co., Militaire Motor Vehicle Co., Motor Car Spring Co., Ogden Mfg. Co., Prismolite Co., Saferlite Lens Co., Sharp Spark Plug Co., Sipp Machine Co., Spencer Metal Products Co., Sterns Tire & Tube Co., Inc., Syracuse Wrench Co.

Tobey Polish Co., Triple Action Spring Co., Tuthill Spring Co., Twin Fire Spark Plug Co., United Engine & Mfg. Co., U. S. Aire Compressor Co., U. S. Gauge Co., Universal Tool Co., Inc., Wales-Adamson Co., Wasson Plaston Ring Co., Weaver Mfg. Co., West Steel Casting Co.

W. E. Pratte Mfg. Co., Sunderman Corp., Water Gas Carburetor Co., Wire Wheel Corp. of America, Guarantee Liquid Measure Co., Macbeth-Evans Glass Co., Nenominee Elec. Products, Inc., Arrow Grip Mfg. Co., Black & Decker Mfg. Co., Challoner Co., Air Device Co., Gibraltar Jack Co., Globe Mfg. Co., McKinnon Dash Co., Syracuse Universal Mfg. Co.

New Liberty Sedan Has Straight Lines

The Sedan recently brought out by the Liberty Motor Car Company, of Detroit, is marked by the straight lines and trim appearance which characterize this company's products. However, there is an obvious

intention to insure comfort as well as a distinctive appearance.

Easy entrance for the driver is permitted without the necessity of disturbing any other passengers by staggering the doors. The one on the left opens into the driver's seat, while the door on the right opens into the rear compartment. As the front seats

are separated, all seats are thus easily accessible from either door. The driver's seat is adjustable.

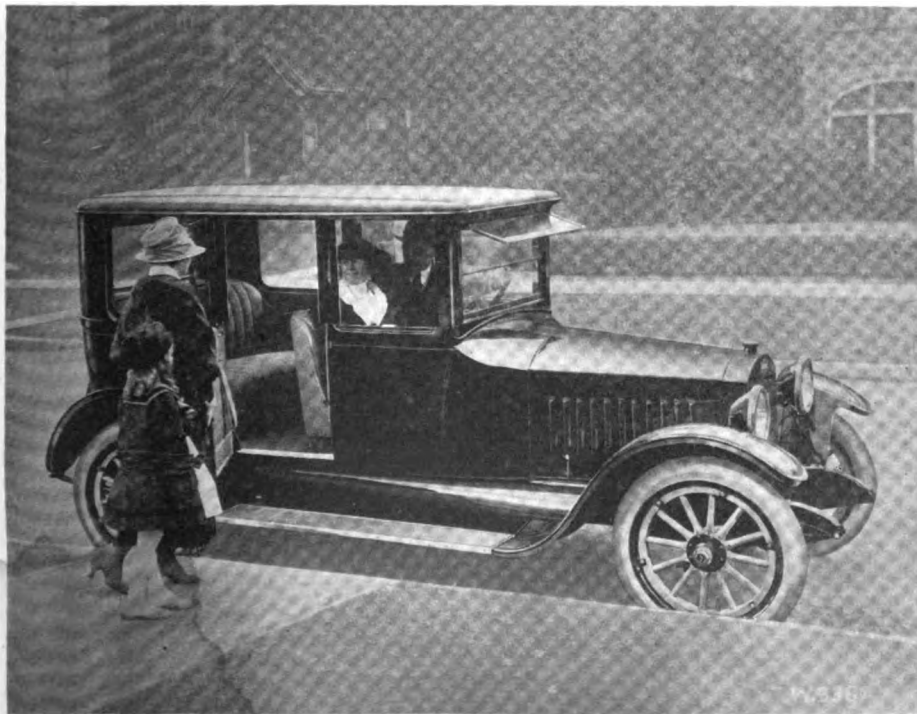
The switch controlling the interior lights is placed at the side of the rear compartment so that it may be convenient to all occupants. The door to the front compartment may be locked from the inside, thus making it unnecessary that more than one key be used to lock the whole car from the outside.

The body is mounted on the standard Liberty chassis which is being continued with only a few minor changes, chief of which is an aluminum crank case on the motor. Five other bodies are included in the Liberty line, two and four passenger roadsters and five passenger touring, brougham and laundalet.

Advocates Greater Loads in Economical Truck Use

An important factor in economical truck operation is the effort on the part of many truck owners to carry capacity loads to a greater extent than formerly. But figures furnished by R. E. Chamberlain, truck sales manager of the Packard Motor Car Company, show room for improvement.

"It is estimated that 370,000 motor trucks are now being used in this country," says Mr. Chamberlain. "The loads these trucks are carrying average only about 45 per cent capacity. This is an average daily loss in depreciation overhead alone of \$1.05 for every truck in operation."



Motor Cars Big Factor in Transportation Field

Use of Passenger Automobiles Saves Time for Farmers and Travelers While Trucks Lighten Task of Railroads

By ALFRED REEVES

General Manager
National Automobile Chamber of Commerce.

More miles of travel by automobiles in use and greater appreciation of the transportation they supply has come with the war. With nearly five million motor cars and trucks available and plans for all lines of business being based on the use of motor vehicles, failure to use them in every possible way would lessen our efficiency as a nation.

Only the optimists of ten years ago, when the motor car was used largely for outings, dared predict that it would be so vitally necessary in American business as it is today. Scientific engineering, greater production and economical manufacturing, have brought the car down to the point where its use has become as general as the telephone and telegraph.

The merchant who delivers other than by motor truck now is the exception, while the recent difficulties of the railways have required a greater use of passenger cars, especially in those sections where distances are great and train service is infrequent.

In connection with the war, very few industries are of any greater service than the one which makes passenger cars and trucks and which is responsible for so many other things like tanks, tractors, and airplanes that are used in modern warfare. A great number of passenger cars are being used not alone for transporting passengers but for carrying merchandise.

As requested by the Railroads' War Board, commuting by automobile and going to and from the office in cities by motor cars will cut down railroad and street car traffic, reducing coal consumption and helping clear the steam roads for greater freight movement. The four and one-half million automobiles now in use in America have a combined seating capacity greater than all the railroad and street cars together.

Cars to Replace Horses.

It is going to be difficult for the U. S. Army to get all the horses and mules it needs. Foreign governments have combed the West and Southwest for good animals. One and one-half million horses and mules have been exported since the war began. With the need for increased production of cereals and other farm products, horses are needed badly for work in the fields. Every automobile used by a farmer enables him to cultivate more land with his horses and every motor truck or delivery wagon

used by manufacturer or merchant takes the place of from two to half a dozen or more horses. Every horse displaced means five acres more land that can be devoted to raising foodstuffs for human beings.

Universal use of motor cars by doctors will enable physicians who remain at home to take care of the patients of the doctors who go to Europe in army and Red Cross work. There is a great shortage of surgeons on most of the fighting fronts. With an automobile a physician can cover many times the territory possible with a horse and buggy or by street car and railroad.

Traveling salesmen visiting the smaller cities and towns now use automobiles. By doing so, one man can do the work of several depending on railroad transportation, with long waits to make train connections. This releases men for other service and helps relieve railroad passenger traffic.

Keeping communication open is doubly essential in war time. The motor vehicle is an important factor in this work. Telephone and telegraph operators, linemen and repair crews equipped with automobiles and motor trucks, can do many times the work possible with any other means. Motor trucks are used by crews digging holes, erecting poles and stringing wires. Repair trucks cover longer distances and enable broken wires and poles to be repaired and communications reopened in a fraction of the time required when horse-drawn wagons are used.

Motorized Mail Service.

The Post Office Department is establishing postal service by motor truck between New York and Philadelphia, New York and Hartford, Conn., Detroit and Toledo and on two long routes out of Pittsburgh. With extension of this service between other cities, much of the burden of hauling Parcel Post matter will be taken off the overtaxed railroads.

Owners of motor trucks can perform a service of benefit to themselves and of importance to the country's transportation system by fitting improvised snow plows to their trucks and breaking open streets and roads in their own vicinity after heavy snow storms. The Pennsylvania State Highway Department is using motor trucks with plows to keep open the main highway through the Alleghany and Blue Ridge Mountains from east to west. The New York City Street Commissioner has ar-

ranged with local truck owners to assist in snow removal in the metropolis.

In the present critical traffic congestion it is imperative that main highways be maintained in good condition to insure the largest possible movement of freight by motor vehicle. Highway repair work can be done much quicker and more cheaply by the use of motor trucks for hauling materials and applying oil and hot tar than by the use of teams. Highway commissioners, inspectors, engineers, etc., are much more efficient when they make their trips in automobiles.

The Government is urging the organization of co-operative delivery service in all smaller cities and towns. Such service reaches its highest development and economy in men and money when motor trucks and delivery wagons are used. One motor vehicle does the work of three horse-drawn vehicles on an average. Thus the automobile is adding to the efficiency of the nation.

Secretary Smyth Exposes National Automobile Ass'n.

Garage men and motor car dealers should warn their customers to be cautious about paying membership fees in so-called automobile associations whose sole purpose is to gain easy money for glib-tongued promoters. One of these organizations, styled the "National Automobile Association," has been exposed by S. E. Smyth, secretary of the Omaha Automobile Club. In a letter to the Chicago Motor Club early last month, Mr. Smyth thus describes the activities of this alleged "national" organization:

"C. W. Valrez and Squire Wilson are at the head of the National Automobile Association, which association promises to give to each member enrolled tour cards, maps, road logs, etc., covering the country.

"The membership fee is \$5. The Omaha Automobile Club investigated the association office here in the World Herald building and found index cards showing a membership of over a thousand in all parts of the country. Valrez beat his office rent, help and other bills here and is now supposed to be near Shreveport, La. So far, all each member has received for his \$5 is a dinky little map of the Lincoln Highway. Members of the association here are for prosecution.

"In Hot Springs, Ark., they secured 155 members at \$5 a member. It seems their plan is to form clubs and then affiliate them with the national body, the National Automobile Association.

"Squire Wilson up to December 5 was at the Herald Hotel, San Francisco, Cal., working the Pacific Coast. This club has wired the California State Automobile Association the facts and expects Wilson's apprehension.

"Automobile clubs are asked to warn their members to let the National Automobile Association alone, as they are not living up to their promises."

Miller Carburetor

For a Faster,
More Powerful, More Economical Car in 1918

THIS year it will mean more than ever to you and your car—a speedy, high-power, big-economy Miller Carburetor.

It will help put your motoring on an efficiency basis—a patriotic basis.

It will help you get a whole lot more out of your motor by thoroughly vaporizing present low-grade fuel.

Miller is acknowledged **WORLD'S CHAMPION** on speedway and race course. And in every-day service on passenger car, truck, tractor or aeroplane, its performance is every bit as remarkable.

Positive automatic action and unequalled simplicity are the reasons. Let us show you.

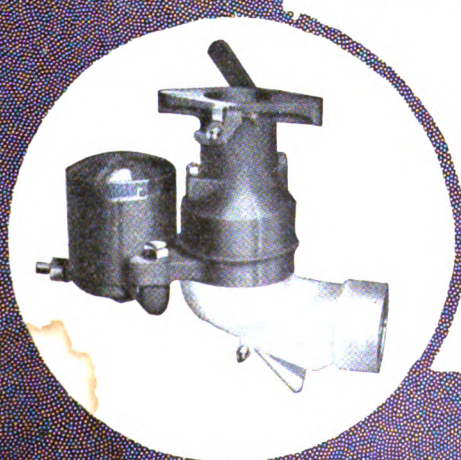
MR. DEALER: *Write or wire for our liberal dealers' proposition.*

Miller Carburetor Distributors, Inc.

2351-59 Indiana Avenue

Chicago

256 BROADWAY, NEW YORK



Gasolene Scarcity Scare Now Proved Groundless

Petroleum War Committee Reverses Its Attitude—Asks Car and Truck Owners to Use Vehicles "to Fullest Extent" for Relief of Railroads

Instead of curtailing the use of motor vehicles as has been necessary in England and France to conserve gasolene for military uses, American car and truck owners will be doing their country a service by using their vehicles to the fullest extent for the relief of passenger, freight and express traffic on the railroads in the United States, according to the Petroleum War Service Committee of the Council of National Defense in a statement issued January 10.

The gasolene situation, which threatened last summer to result in a shortage, has changed radically. Gasolene economy due to the campaigns recently encouraged by the U. S. Bureau of Mines, the drilling of new oil wells, increased production of gasolene by the "cracking process," decreased use of automobiles during severe winter weather and lack of shipping facilities for export to Europe have combined to cause consumption to fall below production. The reserve supply accumulating will tax storage facilities to the utmost before the winter is over.

A statement issued by the Petroleum War Service Committee indicates that it is desirable to use gasolene for power purposes to insure continuous and ample production of fuel oil for the navy. Gasolene is a by-product of fuel oil, which is used also in merchant ships, munitions factories and other industrial plants.

Storage Capacity Taxed.

Gasolene cannot be stored in large quantities because of lack of storage facilities and inability to build additional storage tanks at this time. It is impossible to ship more gasolene abroad than is now being forwarded to Europe. So it is evident that in the present coal shortage and railroad congestion, every effort should be made to utilize motor trucks and passenger automobiles for hauling merchandise and carrying passengers on utilitarian

errands.

The gasolene situation in this country is not to be compared with that in Europe. England and France are almost entirely dependent upon imports of petroleum products and the ability to import is limited by lack of ships. It is for this reason that the use of motor cars for private use has had to be suspended except for the most urgent requirements.

The United States, on the contrary, is the world's largest oil-producing country and is unable to export more than one-quarter of its gasolene production. To the extent that gasolene, kerosene and fuel oil are used for power purposes the supply of coal is conserved.

Trains Man Three Years for Service Manager Job

The Detroit Weatherproof Body Co. of Pontiac, Mich., has taken an experienced service manager from another field, put him through a three years' course in its factory and has finally promoted him to the position of general service manager. He is C. J. Cunningham, who knows the facilities of the Detroit Weatherproof Body Co. probably better than any other one man.

"The idea of putting a man through the factory with his ultimate object the taking over of the service department of the company, or any other executive position, is a new one, but this system is believed in by our company," says E. C. Morine, general manager. "Service is an important feature in our business, and we believe that a man, to give really good service to our dealers and to the general public, should know the factory inside out.

"For the last three years Mr. Cunningham has been studying service from all departments of the factory, and his natural capacity as an executive, combined with his intimate knowledge of production in our factory, should make him an ideal service manager.

"We are firm believers in the special training of men in our factory for definite positions for which their natural abilities seem to qualify them, and we believe that this system could be used with great advantage by other factories."

Passenger Car Men Turn to Trucks

(Continued from page 11)

A Twelve Months Trade.

In maintenance, as in sales, the handling of trucks is more satisfactory than passenger cars. There is the same advantage in uniformity of volume throughout the year. Trucks run twelve months a year, covering as many miles per day in January as in June. Just the right sized force can be employed and the amount of idle time is very slight.

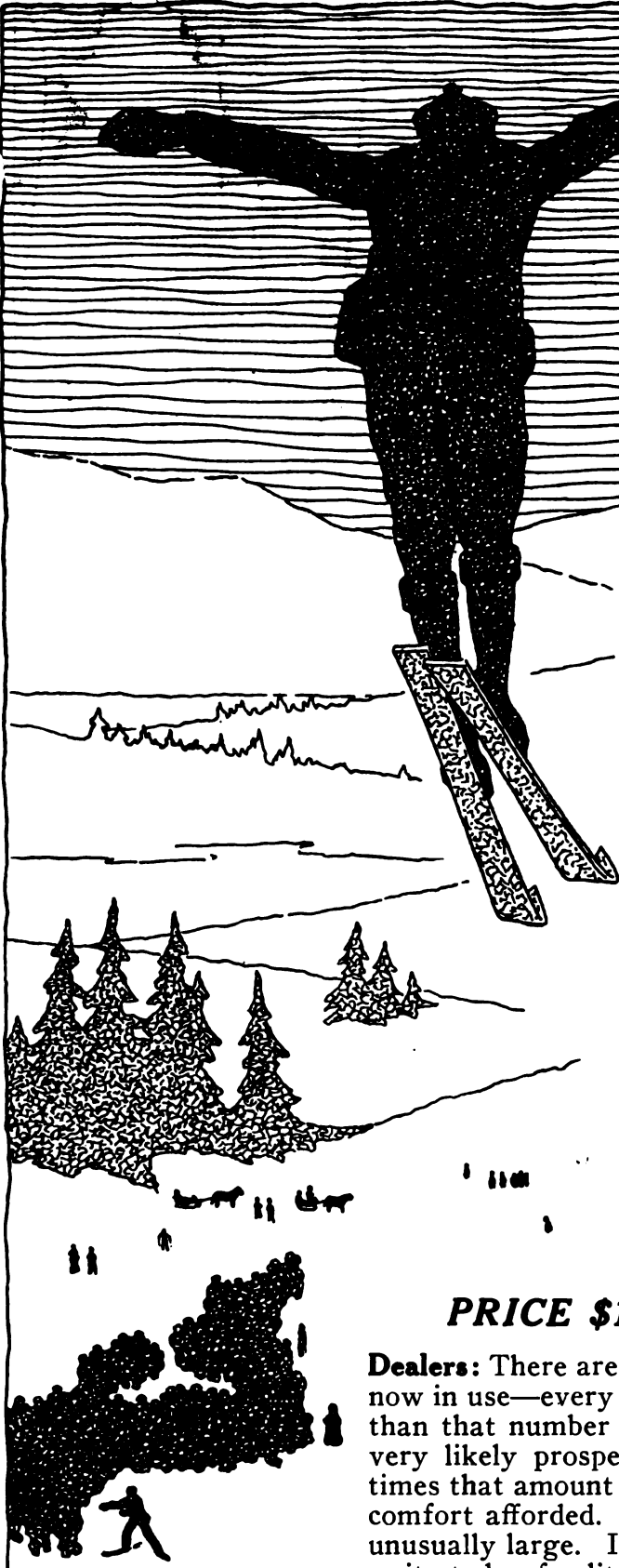
The service station work can be systematized to a degree impossible with passenger cars. The exact period the truck must be in service is known, and the work of inspection and adjustment can be planned so as to eliminate lost time both of the workmen and the truck itself. The same floor space and same force of mechanics will handle a much larger business.

In the same way, a comparison of every angle of the two lines shows that today the handling of motor trucks is a more desirable, more stable business than the selling of passenger cars. It offers to a real merchandiser a greater opportunity than the other ever did.

Business is Permanent.

And looking into the future, a proper motor truck connection affords an opportunity for the building of a permanent, growing business that is without an equal. The business is more personal, as the truck dealer sells the same firms, year after year—not merely by trading in the last truck, but by adding to the equipment. For an equal number of sales, the truck dealer has a great many less customers, as many firms operate not single trucks, but fleets. This makes fair treatment and good service a bigger factor, makes "good will" a bigger asset.

This condition, of great value to the dealer, makes it imperative, however, that great care be exercised in choosing the line of trucks. A passenger car may have a "bad year," and if it "comes back strong" the next year, this is forgotten. Not so with a truck, though. There is no sentiment in a truck purchase. It is bought to perform certain work, economically and reliably, and if it fails, there is no recourse. Only the fit can survive.



SWIFT, SMOOTH AND SURE

is the flight of the ski jumper through the air. There is no jarring or jolting. Such is the motion of the Ford equipped with

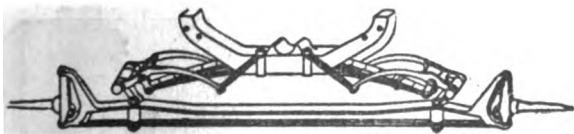


Over 100,000 Fords are now carrying their passengers in comfort, thanks to the W & C. This shock absorber has made good everywhere while numberless others have "dropped out of the market," because it has **done** in actual service what other shock absorbers **claimed** to do. Its double springs help steering, prevent side sway; save tires, and stop the triangular pull that wears out the bearings.

PRICE \$10.00 PER SET OF FOUR

Dealers: There are over 100,000 sets of W & C Shock Absorbers now in use—every purchaser is a booster. There will be more than that number sold during 1918. Every Ford owner is a very likely prospect, as the expenditure of \$10 adds many times that amount to the life of his car—to say nothing of the comfort afforded. The margin of profit we offer the trade is unusually large. If you are not already handling the W & C, write today for literature and our dealer offer.

P. H. WEBBER CO.
HOOPESTON, ILL.



Window Hints As Sales Aids

Three Displays That Have Good Business Value

A casual glance at the pictures reproduced, which are of a character to suggest elaborate attention to details, will perhaps cause the average garage man and automobile dealer to wonder "Why not show displays of more simple character and within our means, so that we can reproduce them according to directions at an expense we can afford?"

The answer to this is to cite the trade publication in which the best examples of window displays, regardless of cost to install, are shown constantly. They are accompanied by the admonition to readers to take inspiration and selling ideas to be adapted to local business conditions, while using less expensive materials.

In this way you can derive benefit from every display. To be able to pick out one selling idea from this group of pictures and with some ideas of your own to assemble an original window display picture shows initiative which is not uncommon among automobile dealers. The clear description of colors and materials surely can be duplicated anywhere to bring the expense within a limited appropriation.

Howe Spotlights Well Shown.

Unfortunately the photograph cannot begin to impart the effectiveness of the window in the picture. The labels on all of the cartons used have a background of red and the display cards are replicas of them. This with the attractive coloring of the ground work, the red, white and blue of the display stands, and the glistening black of the lamps themselves, completed a very striking and harmonious blending of colors.

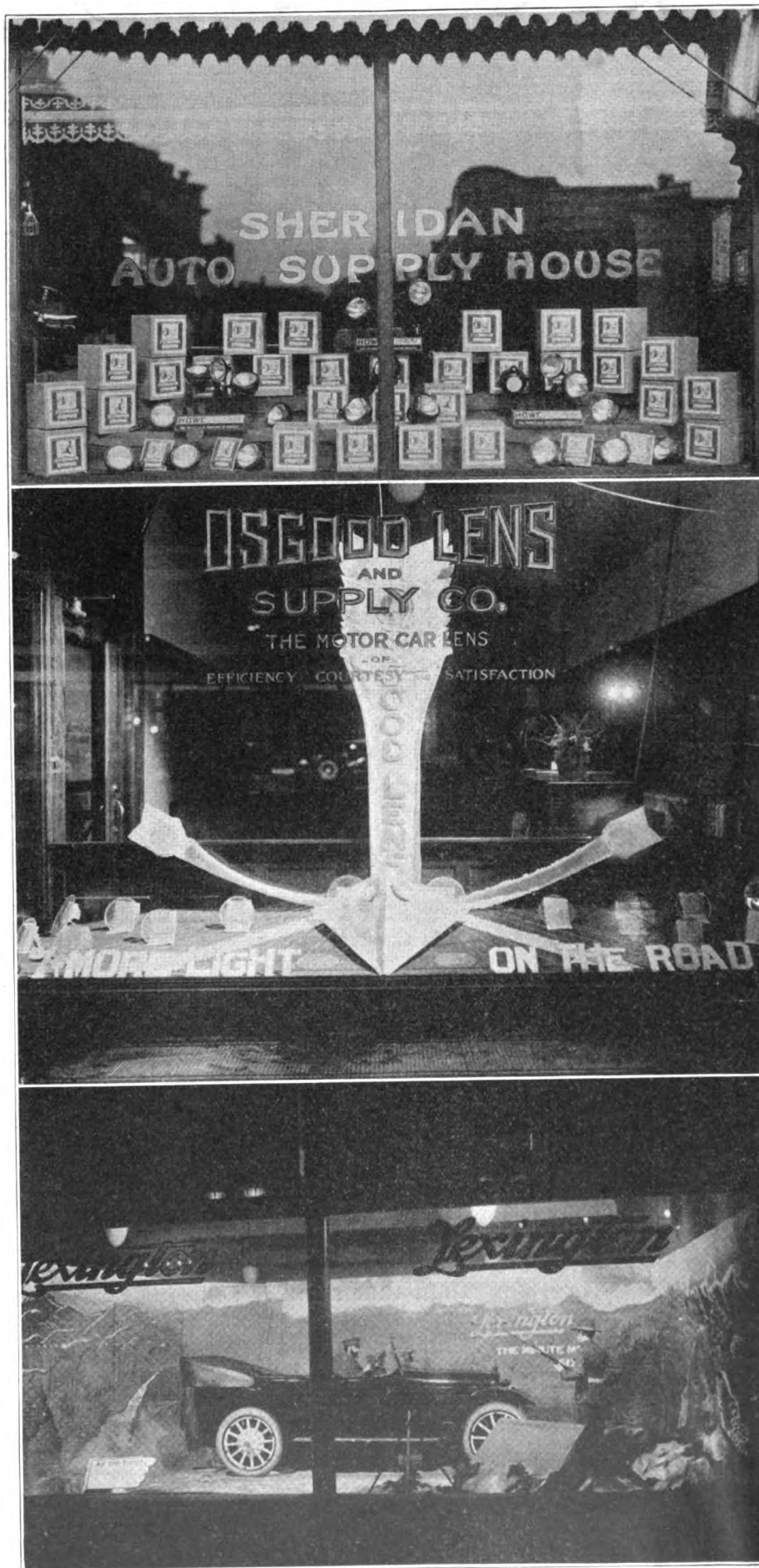
The use of three display stands in one window is rather unusual. It is accounted for by the fact that the Howe Manufacturing Company, the maker, is in the same city and was glad to loan the display stands for the making of this particular display.

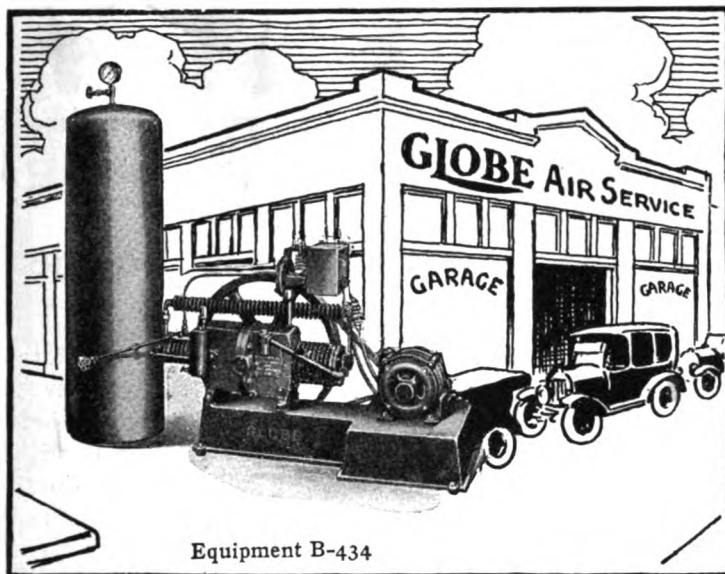
The Osgood Window.

The centerpiece is the most striking feature of the Osgood Lens Company's window. It is a large arrow made on wood framework, covered with plastic relief. The face of the originator of this scientific system of automobile road lighting can be seen peeping through the lens within the letter "O" at the top. The lens inscription in gold relief letters continues down the stem of the arrow to the barb on the floor.

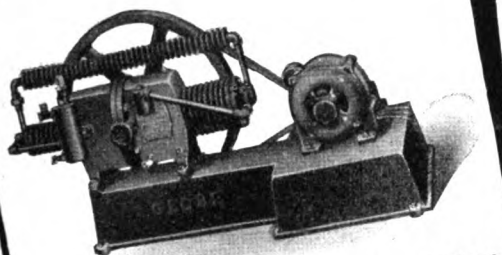
Prints of the lens are attached at the upper points of the barb. White silk cords leading from each print down to the glass touch all the letters in the cut-out inscription which stands upright. Additional arrows with lens attached extend from the

(Continued on Page 30.)

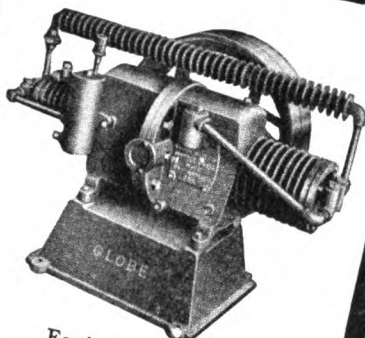




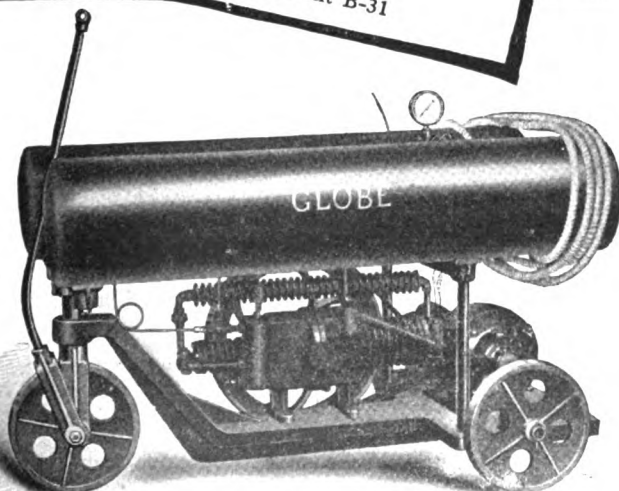
Equipment B-434



Type B Two Stage Air Compressor Motor Driven



Equipment B-31



GLOBE Portable Automatic Air Plant

GLOBE

QUALITY

CLEAN AIR SERVICE FOR 1918

Means More Satisfied Customers

Globe Equipment is an investment which pays big dividends for the garage and service station. Motorists appreciate dependable free air service. They know that the air from a Globe plant is free from oil, dust, and other impurities that shorten the lives of their tires. Globe Free Air Service will develop the good will that builds business.

Globe Two-Stage Air Compressors represent the most economical service for the garageman—the most satisfactory for the motorist. All Globe Type "B" Compressors are of the two-stage air cooled design, which is the recognized type of compressor where long life, continued service, low upkeep and economical operation are demanded. They are known for their perfect design, dependable operation and convenient arrangement.

The Globe Unloader is an exclusive feature that permits the starting of compressor without load. This device avoids the danger of burning your motor or the throwing or burning of belts. It also automatically drains the oil tap every time the compressor is stopped.

Globe Complete Automatic Portable Air Compressor Outfit, No. B-427, is shown in the lower corner of this page. This outfit has sufficient compressor and storage capacity for all requirements, including free air service for the average garage repair shop, salesroom, filling station, etc.

**See Globe Equipment at the
Chicago Automobile Show**

Literature on Request

Globe Manufacturing Co.
BATTLE CREEK, MICH.

The Editorial Point of View

Talk Economy—Sell Economical Devices

While there is so much discussion by the public and in the newspapers, magazines and trade journals on the subject of economy in general and especially in so far as it relates to the use of gasoline, wide-awake garagemen and dealers can use this agitation to increase their own profits. Especially in the case of owners of small cars and others of some years' use there is a great field for the selling of self starters. The lack of these devices furnishes the greatest temptation there is to waste gasoline.

When a man or a woman stops a car to go into a store or make a brief visit it is a most natural thing for them to let the engine run, for they expect to be gone only a few minutes. This is certainly wasteful use of fuel in its most flagrant form. Nor is this the only time when an engine is left running while the car stands idle for a few minutes.

If a driver has been forced to stop a car in a snow bank or a puddle of water and has to leave it for as much as an hour or more the chances are that the engine will be left running. The driver does not wish to wade into snow drift or mud puddle and after that inconvenience be put to the trouble of cranking and trying to start a stone cold engine. Not only can self starters be sold by judicious use of an economy argument but engine warmers, heaters for carburetors and fuel feed pipes, hood covers and radiator shutters can also be merchandised through using exactly the same argument.

Attend, Support and Promote Shows

Automobile tradesmen of all kinds—garagemen, car and truck agents and accessory dealers—should do everything in their power to help along the success of automobile shows. This applies not only to attendance at the big National affairs or larger exhibitions in the greater cities of the country, but also to the comparatively smaller motor vehicle affairs in minor cities and towns. If no show is scheduled in your home town, get busy and combine forces with other dealers and arrange for one.

For one thing, the shows are of great educational value to the tradesman. There he can often see new cars and accessory devices, and in a few minutes gain a knowledge of their uses and advantages that would be extremely difficult to gain by reading printed descriptions. But perhaps the chief value of these exhibitions to the trade is the fact that for the time being they focus all attention on their chosen business. In no other way can such unlimited benefit come to the automobile business as that which follows the concentrated and well nigh universal

discussion by public and press of your wares during the period of the show.

Cleanliness Is Next to the Cash Register

Keep your garage or show room or accessory store or even filling station as neat as possible. Do this even if it requires the putting in of extra time at night or before regular business hours in the morning. For, to slightly change one of the most quoted sayings; "Cleanliness is next to the cash register." Automobilists who travel around through the country to any extent, as well as the owner who drives only in a limited area around his home, are much more likely to make return visits to motor car tradesmen whose places of business have been kept in a tidy condition.

They not only will come back themselves, but will tell their friends about it. Once the habit of neatness has been acquired it will be found that the practice of keeping the place clean will require very little time.

In other lines of trade cleanliness has long been recognized as a great business asset. Consider the case of that ever growing chain of restaurants that dot the map westward from the Atlantic. This concern has a name "that will never grow up," but the firm has attained both size and solidity that promises a long career. It is true that the unregenerate sometimes refer to them as the "tiled bathroom food factories," but the fact remains that their success has been built on a solid rock of cleanliness—and service.

Fix Your Used Cars

This is a period of the year when the dealer who is careful to plan his work ahead uses the spare time of his mechanics to fix up second hand cars he has taken in trade and which have not been disposed of. Dependable, efficient and economical one or two-ton trucks can be produced by taking these old cars and combining them with truck units. In other cases it will be well to fit attachments so that the cars can be utilized for hauling semi-trailers, to be used with the equipment of merchants or manufacturers who are not willing to entirely scrap the horse-drawn wagons they have been using in their hauling services.

There is a double advantage in doing this sort of work now because the men can be put at it when there are no more pressing tasks for them to perform or when there are no Winter over-hauling jobs to be done. This not only saves the employer from paying out money for idle time, but frees him from the necessity of paying something for nothing or else letting his men go away; only to be put through the annoyance and trouble of recruiting another force of men later in the year when there is urgent demand for them.

SPECIAL NOTICE TO DEALERS

The most popular type of automobile on the market today, is the light-weight, moderate-priced car.

That's proven beyond contention by the enormous volume of sales last year of that Model, checked accurately through license registration statistics, in every nook and corner of the United States.

A car with ELEVEN YEARS OF UNBROKEN AUTOMOBILE MANUFACTURING SUCCESS BACK OF IT.

But, let us send you a copy of the latest HI-POWER FOUR catalog, with detailed specifications and views of this wonderful, rapid-selling car.

And, if you are in open territory, we have AN EXCEPTIONAL SALES AGREEMENT WE WANT TO SUBMIT TO YOU—one that carries a minimum of agency obligations with a large—extra large—discount.

With the REGAL HI-POWER FOUR and the

REGAL Hi-Power Four

ITS POPULARITY HAS COME TO STAY.

And, it's a big money-maker for the dealers who are handling a good car in that class.

That's why we want to talk to you about the best car in the light-weight, moderate-priced division—the REGAL HI-POWER FOUR.

A CAR LISTED AT ONLY \$795.00

A car that—GAINS BY COMPARISON—in any company.

A handsome, snappy, stylish car with pleasing, graceful lines and attractive finish.

A dependable car, famous for its reliability and service-giving qualities under all conditions.

A power-plus car, with an excess of driving energy for every emergency. Its own REGAL factory built engine is an absolute guarantee of power responsibility.

A strong, staunch, sturdy car—a high-quality car, constructed on honor from radiator cap to tail light for long, satisfactory, efficient service.

A car you will be proud to represent—a roomy, easy-riding, luxuriously appointed, up-to-the-hour and completely equipped car.

**REGAL MOTOR CAR COMPANY
DETROIT, MICH.**

specially liberal REGAL SALES AGREEMENT you can ABSOLUTELY DOMINATE the light-weight, medium-priced motor car demand in your territory.

Fill out and mail the coupon in to us TODAY, and we will make it easy for you to handle the REGAL HI-POWER FOUR.

V. S. Hibbard

General Sales Manager.

USE THIS COUPON

**Regal Motor Car Company,
Detroit, Mich.**

Am in position to consider your sales agreement on the REGAL HI-POWER FOUR. Let me have full details.

Name

Address

Have a Prospect List

Every reader of the AMERICAN GARAGE & AUTO DEALER who is in the retail business ought to have a live prospect list. If this necessary adjunct of his business has been neglected for any reason he should at once set about getting one together.

Prospect lists may be divided into classes. One may be of possible car buyers and be sub-divided into those who might purchase new cars, and others who will buy only used cars, being by nature bargain hunters. Another list should have names of motorists who might be induced to buy accessories and others whose cars or trucks need repairs or over-hauling.

There is another division that can be made in these lists and this is a geographical one. If your list is only

to contain the names of possible buyers of cars, you of course can not include residents of any section outside of the one assigned to you as your selling territory. But if you have accessories or repair shop service to sell you need not bother so much about the map.

The only thing that need concern you is whether or not the prospect can readily reach your place of business. It will often be found with the accessory dealer that his store is situated in some road over which accessory buyers would have to travel only a couple of miles, on good hard surface, to reach his place of business. But his next door neighbor, a car agent, could not sell to these buyers because of the sales territory limitation. Having first accumulated the prospect list, write or telephone or call on these prospects once a month or oftener.

Newark Tradesmen Make Joint Advertising Effort

Unusual interest was aroused, not only in the city of Newark, but throughout the entire state of New Jersey, by co-operative page size newspaper advertising run recently by a number of car and accessory

dealers in Newark. The first advertisement, the text of which is reproduced here, was a sort of general appeal, and the second one, which is also reproduced, drove home the fact that the motor vehicle industry is a most "essential" one in no uncertain terms.

Especially in these days when there has

been so much talk of automobiles as "pleasure cars," advertising of this kind cannot help but clear this mistaken idea out of the minds of the public and the law makers. It will surely have very good results in increasing the business of the firms that join in such an effort.

(Continued on page 24.)

Cassidy Firm to Sell Rajah Spark Plug Line

Arrangements have just been made between the Edward A. Cassidy Co. of New York and the Rajah Auto Supply Co. of Bloomfield, N. J., manufacturers of Rajah spark plugs and Rajah spark plug terminals, whereby the Cassidy organization is to act as the sales department for the Rajah company and have entire charge of the selling end of the Rajah business hereafter. Gregory Flynn, formerly the Rajah sales manager, has joined the Cassidy staff.

Rajah plugs have been manufactured for sixteen years, and were one of the first spark plugs on the American market. They are used extensively by airplane manufacturers and by the Government in army and navy planes. The majority of all racing cars are Rajah equipped. The winner of Pike's Peak hill climb, the winners of the 20, 50 and 150-mile races at Sheephead's Bay Speedway all used Rajah plugs.

Both the Cassidy organization and the Rajah company are to be heartily congratulated upon this connection. The Cassidy company enjoys a prominent place and a splendid reputation in the automobile accessory field. The Cassidy firm also sells Conaphore headlight lenses, G. P. muffler cut-outs, Long horns, Kimball jacks, Tenion piston rings and Cassco motor-driven tire pumps.

THE FIRST ADVERTISEMENT.

EVERY TURN OF THE MOTOR CAR WHEEL VITALIZES OUR INDUSTRIAL PROGRESS.

When you have watched the wheels of trucks and delivery cars grinding their way over the pavements of city streets; when you hear the hum of the pleasure cars as they speed along the highways; when the roar of the racing car echoes around the speedway; when mountains of tires catch your eye as you pass the window display of the dealer; when impressive announcements of passenger cars and commercial vehicles awaken your desires to own the first car or purchase a model of newer design, HAS IT EVER OCCURRED TO YOU THAT EVERY REVOLUTION OF A WHEEL OF A MOTOR CAR HELPS TO TURN THE WHEELS IN A MONUMENT OF AMERICAN INDUSTRY—A GIANT FACTORY?

The owner of an automobile is so often "wrapped up" in the matchless pleasures derived from the touring car he seldom realizes his personal importance in America's automobile trade.

The factory, the dealer, the salesman and the mechanic are indeed important in the progress of the industry. However, you must CONSIDER THE VITAL IMPORTANCE OF THE BUYER.

All the features of the business, its success and growth must finally depend upon the public demand. A demand created and upheld by you, Mr. Auto Owner.

It is your quick realization of all the advantages of the car, both passenger and commercial; your final judgment of the merits of motors; your decision to buy, to drive far and often; to keep the cars in use throughout all seasons; in fact, it is your determination to keep the wheels of your auto turning that keeps the factory wheels revolving day and night.

You and all other owners of motor cars are keeping thousands of workmen busy.

The workbench, the paintshop, the assembling plants, the offices and the sales-rooms of these factories owe their activities to you and thousands of progressive Americans like you.

It is well for you to realize all these things as well as the pleasure derived from possessing an automobile.

IN THE FUTURE TAKE PRIDE IN YOUR POSSESSION.

Each time you and your family step into the car for a health-inspiring spin through the open country; whenever the truck or delivery car leaves your place of business to extend service to your patrons, remember that each dollar of the original cost, each cent of the "up-keep," has helped to buy the fuel to turn the wheels of factories; factories that contribute to the nation's wealth and the advancement of skilled labor.

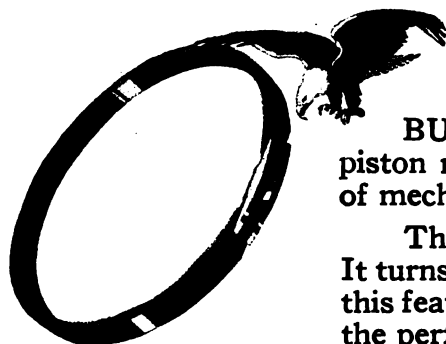
If you fully realize these features of possessing an automobile you will surely take a greater interest in autoloing for pleasure and for business reasons. These features, added to the pleasures and commercial value in owning a car, should stimulate your desire to own one NOW.

Now is when a car is a necessity if you would reap your full share of pleasure. NOW if you would hold your position or advance in the race for business su; emacy. WITH the desire comes the need of unbiased, expert advice.

Such advice can be received from any of

THESE PROGRESSIVE AUTO DEALERS OF NEWARK.

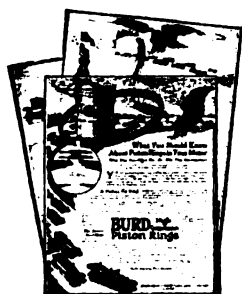
4 reasons why you should sell Burd rings



A Scientifically Perfected Ring

BURD Piston Rings represent the greatest advancement in piston ring manufacture of the past decade. They are the work of mechanical experts. The result of years of experimentation.

The BURD Guarded Opening seals the power in the cylinders. It turns waste power into extra power. No other piston rings have this feature. It is exclusively BURD. And so no other ring assures the perfect and constant piston ring fit that BURD offers.



A Nation-Wide Advertising Campaign

Full page advertisements in the Saturday Evening Post are appearing regularly. They are educating motor car owners to the vital importance of perfect piston rings in motor performance. They are proving to them that BURD Rings excel — and why.

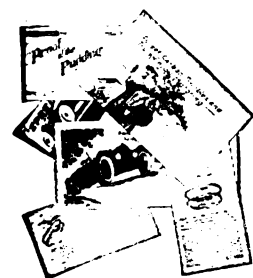
And so just as motor car owners are demanding certain axles, bearing and lighting systems, they will now demand BURD Piston Rings.

A Complete Dealer Service

The BURD Company is not content merely to manufacture a perfect ring and tell its story in national publications.

The most complete dealer service ever offered by an accessory manufacturer ties up right to your store its quality product and the thousands of dollars spent in advertising.

Circulars, letters, placards, signs, newspaper advertising that point to you as a BURD Piston Ring dealer are furnished you free.



Easy Sales—Big Profits

A combination such as we offer guarantees a demand for BURD Rings. You don't have to SELL them. Motor car owners will ASK for them. And with all this you get a margin of profit that we know you will consider most liberal.

You, as a live dealer, must realize the exceptional opportunity BURD HIGH COMPRESSION RINGS offer. So write your jobber or direct to us today.



Burd High Compression Ring Company
Rockford, Illinois

BURD HIGH COMPRESSION PISTON RINGS

THE SECOND ADVERTISEMENT.

THE MOTOR CAR IS A NECESSITY.

Recognized in its true light by the Government, the business world and the individual buyer, the Automobile now casts aside the words "Pleasure car," and appears properly classified as a vehicle of

SERVICE—a "Passenger Car."

Have you been a member of the "Ponderers' Class"?

Have you often wondered how your neighbor could "afford" a car?

Cast aside the wonderment. Quit the "Ponderers' Class." Apply the saner principles of sound judgment and ask yourself: "Can I afford to be without an automobile?"

THINK—reason with yourself—what is your time worth?

Is your neighbor's day more productive than your hours of business activity?

The Passenger Car and commercial vehicle "stretch time" by shortening distances.

The doctor makes more calls; the salesman "covers" larger territory; the merchant arrives at his store earlier and in better humor; thanks to the Passenger Car.

Everybody's day is longer, brighter, less tiresome and more productive because the distance from the home to the office has been shortened; the business trip has been speedier and more pleasant; the open air and sunshine have played cheerful parts in the day's endeavor.

Such days have a "Dollar Value" which shows on the right side of the Ledger.

These days are good reasons why your neighbor can "afford" a car.

Your neighbor's ruddy-cheeked children, the happy, contented mother, the dear old grandma with "never an ache or pain," are envied by everybody who sees them. They are happy, healthy specimens of human nature, thanks to the afternoons and Sundays spent in the Passenger Car.

The auto-owner not only lengthens his own business days, but he also lengthens his family's living-days.

The scarcity of doctor's bills—the absence of long and costly health trips for a sickly wife or feeble grandma are reasons why your neighbor can "afford" a car.

The active, healthy mind of a robust child is priceless. The child in the open air drinks in through observing eyes the true picture of the grandeurs of hills and valleys. The mental picture of lake, river, mountain, seashore, forest, field and farm is more convincing and more beneficial when developed on a tour of the National and State highways than when drawn from the flat maps and dull pages of a geography.

History has dotted the State with places of interest.

These places can be visited by the Passenger Car.

Thus are Geography and History taught in practical manner with the aid of "Daddy's Car."

In these features alone the motor car excels as an educator. At the same time the great out-of-doors is building tissues of brain and muscle. A priceless combination of education and health-building.

How can anything as NECESSARY to your children's physical and mental welfare be considered a luxury?

That which lengthens the busy man's day is no luxury.

That which increases your field of business endeavor is a necessity.

That which lengthens the life of every member of your family can well be afforded.

Owning that which saves health, time and money is true economy.

That which moulds a healthy family and assures more efficient employers and employees is genuine American Patriotism and Progressiveness.

And these are embodied in the possession of an automobile.

All that a passenger car is to the individual, the commercial car is to the business house.

When you have purchased a car you have multiplied your efficiency by two or more; you have retained a family doctor at no extra cost; you have employed a tutor for your children, a physical instructor for your entire family; you have acquired a personal and business asset that you cannot afford to be without.

If you have any transient gasoline trade keep some one gallon cans of lubricating oil handy. Then when your pumpman is winding up the fuel he can ask the customer if he does not need some oil. Quite a few of them will.

Among the Manufacturers and Executives.

W. H. Teneyhill, formerly sales manager of the Scripps-Booth Motor Company, has joined the Detroit Weatherproof Body Company at Pontiac, Mich. He heads the sales department.

E. N. Broderick, well known in jobbing circles, and an expert in automobile acces-

sories, has been appointed special representative by the Burd High Compression Ring Company.

D. G. Bechtel has been appointed advertising manager of the D. & S. Motor Company, an automobile distributing concern with establishments at Cedar Rapids, Des Moines and Marshalltown, Iowa.

A. F. Knoblock has been appointed works manager of the Cleveland Tractor Company. He was one of the founders of the Northway Motors Co. some sixteen years ago and associated in a managerial capacity with the General Motors Company. Later he became the Cole Motor Company's vice president and general manager.

W. H. P. Reilly has joined the Globe Rubber Tire Manufacturing Company as a special representative under President J. C. Matlack. He had been Pacific Coast sales head for the Ajax Rubber Company, having gone into that organization when Mr. Matlack was director of the Ajax sales force.

Arthur H. Cummings is now advertising manager of the Timken Roller Bearing Company, Canton, Ohio. Until recently he was associated with E. C. Tibbitts, head of the B. F. Goodrich Company advertising department at Akron, Ohio.

A. R. Johnson has become assistant advertising manager of the Hyatt Roller Bearing Company and is stationed at the Detroit office. He resigned a similar post with the Cadillac Motor Car Co. to join the Hyatt forces.

R. M. Hernandez, long a member of the United States Tire Company's force, is now central district manager for the Carlisle Tire Company. His headquarters are at Chicago.

The Staybestos Manufacturing Company of Philadelphia has opened an office in the Kerr Building, Detroit, under the management of W. C. DuComb, Jr., an engineer well known in the automobile industry. The concern has also opened an office at 608 South Dearborn Street, Chicago, with Edwin E. Colth as manager.

W. W. Burke has been appointed sales manager of the electrical starter division of the American Ever Ready Works, Long Island City. He will have charge of the marketing of the new starting and lighting system for Ford cars. Mr. Burke was formerly Eastern sales manager for Gray and Davis, Inc.

W. L. Agnew has been elected vice-president and general manager of the F. E. Stuyvestant Motor Co., Hudson distributors at Cleveland, Ohio. He was director of advertising for the Chalmers Motor Company, but resigned when that concern was leased by the Maxwell organization. Mr. Agnew has been a member of the copy staff of the Lord & Thomas advertising agency and was advertising manager for the Hudson company four years. He wrote the book, "Letters of a Successful Hudson Dealer to His Son."

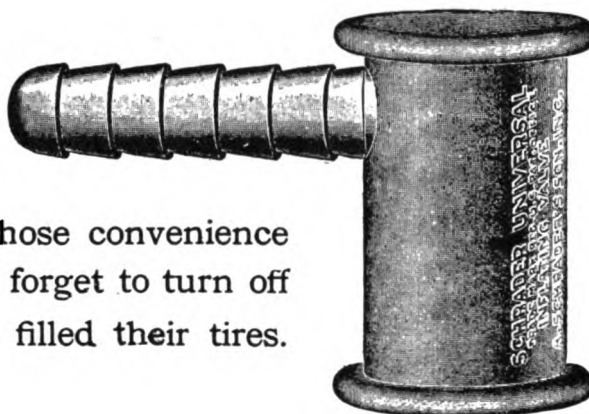
The Moline Automobile Company, makers of Moline-Knight motor cars, and the Root & Van Dervoort Engineering Company have been consolidated into Root & Van Dervoort Engineering Company of East Moline, Ill., an Illinois corporation. The officers and management remains the same and there is no change whatever other than in the name of the company. The Root & Van Dervoort concern was established in 1898 and has produced gasoline and kerosene engines. The Root & Van Dervoort officials founded the Moline Automobile Company in 1904. In 1913 the Moline company adopted the Knight sleeve valve motor as the power plant for passenger cars, using the trade name "Moline-Knight."

After an existence of nine years as a department of the Chicago Pneumatic Tool Company, the motor truck interests of the concern have been taken over by a new organization known as The Little Giant Truck Company. It will market motor trucks from one to five tons capacity and the Duntley gas generator, which permits the use of cheap fuels such as kerosene and distillate. The company is owned and controlled by the Chicago Pneumatic Tool Company and the officers are the same: W. O. Duntley, president; W. B. Seellg, secretary; L. Beardsley, treasurer; T. J. Hudson, sales manager. The headquarters will remain in the Little Giant building, 1615 Michigan avenue, as heretofore.

Garage Men!

FREE AIR COSTS MONEY

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.



Guard against this waste by attaching a
**SCHRADER AUTOMATIC
INFLATING VALVE**
to your air hose

The Schrader Inflating Valve automatically locks the bottled air into the tank the minute it is taken off the tire valve. You turn on the air by pressing the nozzle of the inflating valve against the tire valve, and you turn it off by removing the device from the tire valve.

It is made to fit any diameter stock sizes of hose, from one-quarter inch to five-eighths.



PRICE IN U. S. A.

\$1.25

Manufactured by

A. SCHRADER'S SON, Inc.
 800 Atlantic Avenue, Brooklyn, N. Y.
 LONDON CHICAGO TORONTO

How to Make the Shop Pay

Stock Record Is Instituted and Supplies Kept in Order —Old Building Becomes a Warehouse

By E. B. HINRICHSSEN

(Continued from December)

Keeping track of stock was the next problem Mr. Brown and Bill tackled. Up to this time the supplies such as bolts, nuts, spare parts and the various other articles necessary to the shop business, were ordered through the office in a haphazard way and no account kept. The stock was never kept in order. Material of a certain kind would run out before it was realized and orders often went in for supplies when there were plenty on hand.

Every repairman's kit contained a miscellaneous assortment of odds and ends and the bench drawers were in the same condition. There was a place for nothing and nothing was in its place. The men took tools as they wanted them and most of them personally owned parts of their kits. The scrap pile was added to but never sorted. Bins, shelves and racks had been built at one time, but everything was mixed up.

After the inventory was taken, everything was sorted out. The scrap pile was gone through and all available material salvaged. The remainder was junked. Old racks that were occupying valuable floor space and which were built for articles not often used, were moved out.

In the rear of the shop was an old building that had been used as a dumping place for everything not required immediately. In it were old car bodies, broken cylinders, broken spring leaves, old pieces of shafting and all the various junk that too often accumulates in a garage. The structure was cleared out, cleaned and repaired where necessary.

All Material Sorted.

All material that could be used to advantage was sorted and arranged in order. The junk dealer bought the remainder. The amount realized from the sale of accumulated junk was sufficient to pay all the expense of cleaning-up, erecting the racks and repairing. This tickled Bill.

The building was carefully laid out to take care of material not in constant demand. Racks, shelves and bins were made from old lumber to properly hold articles to be stored. Pieces of shafting, spring leaves, odd pistons, lengths of piping and the various other articles seldom used were arranged so that parts of one kind were together.

For instance, if a rear axle was to be replaced and the size of the shaft was $\frac{3}{8}$ -inch, the rack for $\frac{3}{8}$ -inch shafting had the piece in it, provided there was a suitable piece on the place. If not, it only took a minute to find it out. The length of the piece

required was all that concerned the mechanic. He knew that rack held all the $\frac{3}{8}$ -inch round there was in the shop and he did not spend any time hunting elsewhere. All metal that would rust was either painted or greased to keep it in proper condition.

Supplies in constant demand were kept in the shop proper. These were located so as to occupy as little space as possible and yet be readily accessible. Every box, bin, shelf and rack on the place was plainly marked to show what it contained or was intended to contain.

As Bill expressed it, if there was only one cotter pin of a certain size in the shop,

SUGGESTIONS ARE WELCOME

These articles by Mr. Hinrichsen are being prepared to help our readers in the everyday work of their business. We hope that garage men, dealers or repair shop owners who have any ideas along these lines will not hesitate to send their suggestions along to us. This department can be made even more valuable than it is now if our readers will help make it so by their assistance. We will welcome all ideas concerning not only conduct of the garage, showroom and repair shop, but those regarding laying out a repair shop, stock bins and storage shelves for parts.

he wanted that cotter pin in a box by itself and the box marked. It was done, too, and he boasted he could take a complete inventory of his supplies in a few hours.

All the shop tools held by the men were called in and those in bad shape repaired or discarded. A tool kit was then issued to each man and he was charged with it. No personal tools were allowed except pocket tools such as pliers, rules, etc., and these were furnished if desired.

Tools Conveniently Arranged.

When a tool was lost or broken, the man came to Bill for another to replace

it. In this way he kept track of the loss or breakage and who was responsible. The common tools such as were in use by all were conveniently arranged and it was the rule that every tool must be returned to its place before the final "time finished" was stamped on the work record.

Machines, floor, benches and tools were kept clean at all times. The men backed Bill in everything. They were good friends and out for results. They liked the orderly arrangements and the ease with which they could find things. A spirit of co-operation sprang up and a little piece of carelessness on the part of one was the signal for a brief lecture from his nearest neighbor. To leave a puddle of grease on the floor was a misdemeanor, if not a crime.

They christened Mr. Brown "Old Efficiency," but he had a way that took with them and they liked him. They were just the ordinary bunch of dirty-faced, hard-driving, thoroughly reckless individuals that you can see around most any garage and without an ounce of real vice among them. They decided they would go "Old Efficiency" one better on everything he suggested and it was not long before Mr. Brown had to hold them back rather than push them.

Almost daily someone would suggest some impossible improvement with a grave face and earnest manner. If he could get Mr. Brown to consider it for even a few minutes he would chuckle over it for an hour. He soon learned their ways, however, and had a liking for every one of them. They came back by loyally supporting him and Bill in every move they made. It was merely a case of getting them into the right attitude.

Motor Mechanics Wanted To Help Overseas.

Automobile mechanics are wanted for early service overseas. The men in the front line trench need the help and co-operation of skilled men back of the lines. Drivers and repair men are wanted at once for the Enlisted Ordnance Corps, National Army. Uncle Sam is calling on our trade to come across and help his fighting men. The call has gone out for motor vehicle experts between the ages of eighteen and forty who want to do their bit, and who know their job. The army that wins is the army which has the best equipment and the best men. The men over there need experts in our line to repair and maintain their equipment. There is a fine chance for every man who wants to help. Write to the Chief of Ordnance, War Department, Washington, D. C.

Hudson Men in New Firm.

The Essex Motors, with an initial capitalization of \$500,000, all paid in, has been incorporated at Detroit. The officers are: W. J. McAneeny, president; R. B. Jackson, vice-president; R. B. Jackson, vice-president; A. Barlt, treasurer; J. L. Vette, secretary. The board of directors includes, in addition to the above officers, R. D. Chaplin, F. O. Bezner and O. H. McCornack. All of the officers and directors are at present associated with the Hudson Motor Car Company.

AMPECO PRODUCTS

will prove a big factor in making 1918 your banner year

Every motorist knows the quality and reliability of "AMPECO" Pistons, Cut-Outs, Brake Shoes, Wheel Pullers, etc. By ordering a stock now you can do a very profitable business during the coming year. "AMPECO" Products always give satisfaction. They will please your customers and build your business.

AMPECO PISTONS for FORDS

stand in a class by themselves when quality of material and workmanship are considered.

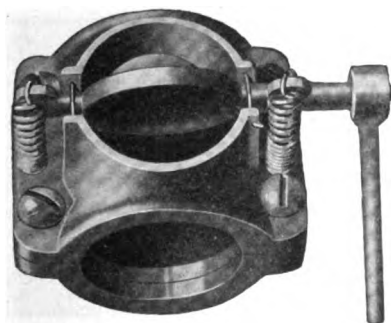
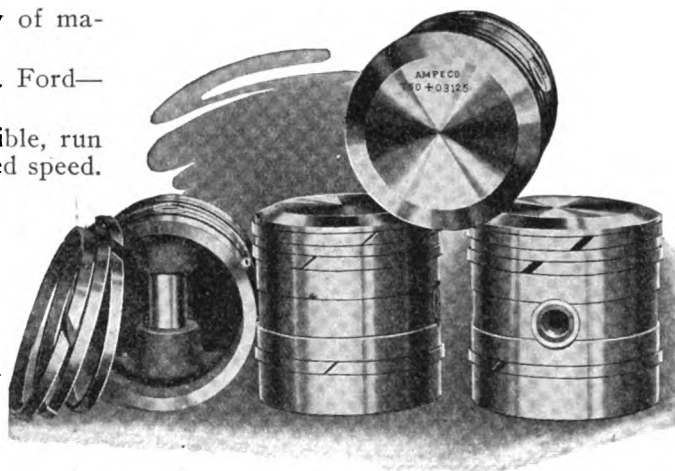
We have the right piston for any kind of a Ford—touring car, roadster, truck or tractor.

"AMPECO" Pistons make Ford motors flexible, run smoothly, provide greater power and increased speed.

"AMPECO" Pistons uniform in weight—do not vary more than an ounce—mechanically perfect and true to measurements.

"AMPECO" Pistons make a four-cylinder Ford run like a multiple cylinder car.

A Ford motor with four pistons of the same weight, and of light weight, will make a much smoother running motor, overcome main bearing troubles, give increased power, and increased speed.



Marshalltown ENGINE TESTER or CUT-OUTS

are expressly designed to satisfy the most exacting demands of the motor-ing public. They are the best that high-grade material and expert work-manship can produce. Valves and journals are cast in one piece. Valve is thick and has beveled knife edges which insure a tightly closed valve at all times. The longer the device is used the tighter the valve becomes. No pulley is required. Made in all sizes.

We also make Competition Muffler Cut-Outs for Ford, Maxwell, Hudson, Buick, Cadillac, Dodge, Chevrolet, Saxon, Studebaker, etc.

"AMPECO" Wheel Pullers. Extra heavy, strong, durable, accurately machined and threaded.

"AMPECO" Brake Shoes. One-piece gray iron, machined; also two-piece gray iron, not machined.

If your jobber does not handle "AMPECO" Products write us direct. Do it today.

Fulton Sales Co., 1400 Karpen Bldg., Chicago, Ill., General Selling Agent for

American Machine Products Company
MARSHALLTOWN, IOWA



Sell Tires by Telephone— One Newark Dealer Does

Selling tires by telephone may be a new idea to some of our readers but it can be done. In fact, it has been done by an accessory dealer in the city of Newark, New Jersey.

His method of operation was to have a desk telephone placed in one of his show windows, the window being so located that he had a good view in both directions of the street in front of his store. He specialized on soliciting orders from owners of a score of the medium priced cars.

He prepared a little table for himself, showing the sizes of the tires used on the Ford, Dodge, Regal, Hupmobile, Maxwell, Chalmers, Briscoe, Buick, Dort, Elgin, Empire, Grant, Liberty, Oakland, Oldsmobile, Overland, Olympian, Reo, Saxon and Studebaker. He also made another list of the tires he had in stock that would fit these cars with prices for casings—smooth and non-skid—and tubes. He had a list of the cars registered from Newark, and was then ready for business.

So when a Ford would come along, or a Dodge, an Elgin, a Saxon or Maxwell, or any one of the makes on which he was specializing he could tell at a glance the condition of the tires. He would also note whether or not any spare tires were carried when he read the license number.

Easy to Tell Owners.

Then he would look up the owner of the car on his registration list and call her or him up by telephone. Of course, in some cases it was not possible for him to locate the car owner by telephone, but to these prospects he wrote a special letter, an individually dictated one in each instance.

When the car owner had a telephone, and most of them did, he would

make his solicitation direct and personal. He would say, for instance:

"Mr. Owner, when your car passed my store today I noticed that the tires on the left front and the right rear wheels seemed to be rather worn. I have in stock several good makes of



The Only Tool You Need.

tires that would fit those wheels; including Firestone, Fisk, Goodrich, Michelin and Miller.

"I can sell you these tires for \$——. I have men here at the store, carefully trained experts whose special duty is to change tires. If you can drive your car here any time during business hours and leave it for half an hour the new tires will be on the wheels when you return."

Of course, not all of these owners to whom he talked over the telephone bought tires from him. But so many of them did that he made a good deal of money and many friends as well. At the same time he was obtaining the kind of advertising which always follows the carrying out of a care-

fully planned and perfectly executed merchandising idea.

One Sale Led to Another.

Nor did he stop at tires, but sold a great many sets of tire chains, in many cases getting the orders for them when the owners drove their cars to his store to have one or more tires put on. In a number of cases he sold spot lights, foot warmers, robes, wind shield cleaners, or anti-freeze mixtures to motorists who went to his store as a result of a telephone conversation or the letters which he used when the telephone plan could not be used because the car owners were not listed in the phone book.

This identical plan can be used to advantage by other garage men and accessory dealers all over the country to sell tires. As a matter of fact, a good many garage men and car dealers who do not handle tires could with great advantage to themselves go into the tire business by adopting this plan.

In the case of a dealer or garage man located in a small place where it would not be good business to keep a big stock of tires on hand, the idea can be used with very slight modification. In this instance the dealer could say that he could get the tires in a certain number of days, and put them on for an agreed price. This would be possible by first making arrangements with a jobber or a tire company to obtain tires.

Speed in changing tires is one of the vital features of successfully selling tires by telephone. The dealer ought to make a couple of long-handled wooden jacks, such as those evolved for quick tire changes in road and track racing, by which the front or rear end of a car can be instantly raised from the ground. The men must also be trained for both speed and precision in tire changing and the casings or tubes be unwrapped and waiting when the customer's car arrives.



Bearings Service Exhibits in Twenty-two Cities

We're having an "Auto Show" all our own—and not merely one, but twenty-two of them—one at each of our twenty-two branches.

There's much of interest at these exhibits for every automobile dealer, garage-man and motorist. You'll find here for inspection, Timken, Hyatt and New Departure bearings of every size ever used in motor vehicles—besides valuable books and literature to assist you in

getting a maximum of service out of the bearings in your own motor car.

These exhibits will continue during the entire month of January. Don't fail to attend the one at our branch nearest you—and get your souvenir.

Branches In These Cities

New York
Detroit
Chicago
Boston
San Francisco

Los Angeles
Atlanta
Seattle
Minneapolis

Kansas City
Dallas
Cleveland
Denver

Indianapolis
Philadelphia
St. Louis
New Orleans

Omaha
Pittsburg
Portland, Ore.
Toronto, Can.
Rochester



**BEARINGS SERVICE
COMPANY**

General
Offices

Detroit,
Michigan

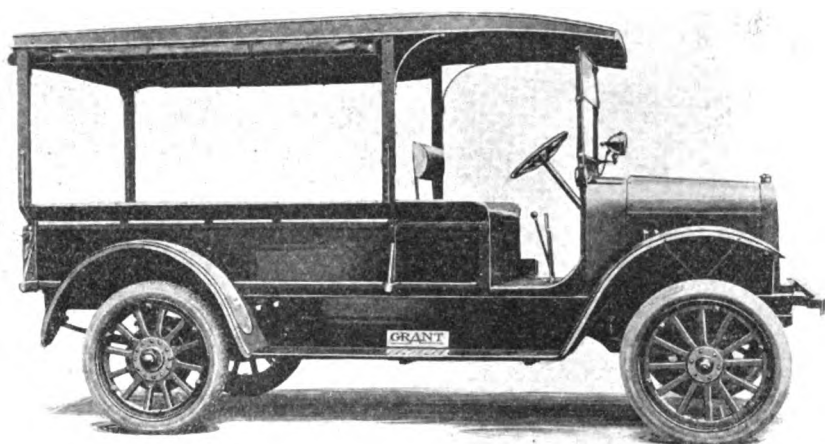
Electric Light and Starter for Grant Truck Models

Electric starting and lighting, with spring cradle battery suspension, straight line drive, transmission-drive governor and cushioned radiator are features of the line of trucks produced by the Grant Motor Car Corporation of Cleveland. Though now known as Grant trucks, they are a continuation of the successful DENMO line, formerly manufactured by the Deneen Motor Company of Cleveland, which concern was bought by the Grant Company recently.

The models built include a 1,800 pound truck known as Model 12; a ton and a half

15, nine feet; in Models 11 and 16, eleven and a quarter feet. Another feature of the Grant trucks is the fact that only 63 per cent of the pay load is carried on the rear axle.

This line of trucks, under the name DENMO, was one of the first to use a successful electric lighting and starting system. The battery is carried in a patented spring cradle and is less subjected to shock than the battery of a passenger car. The equipment includes instrument board with speedometer, ammeter, lighting switch, ignition switch, oil gauge, carburetor choke. All models have front bumpers, head and tail lights, rain vision windshield, horn, tools, pump, spare rim and spotlight.



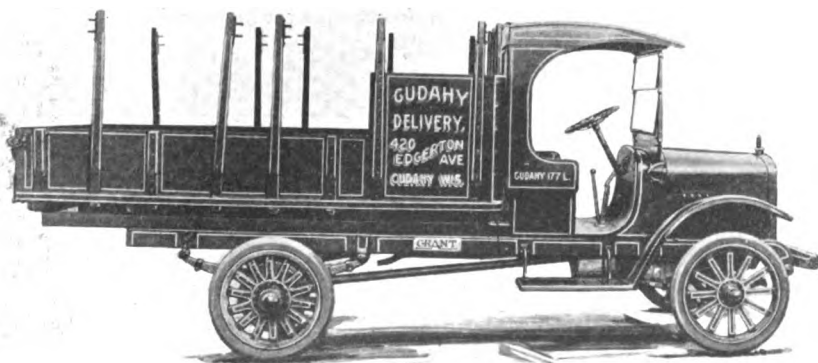
Grant Pneumatic-tired Truck.

truck known as Model 10, and a two ton truck known as Model 15. In addition there are Model 11, which is the same capacity as Model 10 but with longer wheelbase and loading space, and Model 16, which is the same as Model 15 but longer in wheelbase and loading space.

A distinctive feature of the Grant truck is the unusually large space for pay-load, back of the driver's seat. In the Model 12 this space is seven feet; in Models 10 and

Columbus Show Four Days

This year's automobile show at Columbus, Ohio, will be a four day affair, beginning Wednesday, February 27, and closing Saturday, March 2. O. C. Belt, the Franklin dealer, is chairman of the show committee, his associates being Manager Bulky of the Ford Branch and H. K. Dobson of the Everett Automobile Sales Company, the Maxwell dealer.



Grant Truck with Large Loading Space.

All States Share Federal Fund

All the states of the Union have availed themselves of the opportunity of participating in the benefits of the Federal aid road act, which appropriated \$75,000,000 for the construction of post roads and \$10,000,000 for forest roads, according to the report of the director of the Office of Public Roads and Rural Engineering, United States Department of Agriculture. That the passage of the act has stimulated road building is shown by the fact that in 1916 there were approximately \$41,000,000 of state funds expended for all highway purposes, and it is estimated that in the calendar year 1917 the aggregate expenditures of state funds for this purpose was at least \$60,000,000.

(Continued from page 18.)

back on each side of the centerpiece down to the floor. Unit displays of lenses of all sizes stand on the floor. This display was installed at a nominal expense.

The Lexington Display.

The automobile setting pictured shows that the Lexington Chicago Motors Co. has not regarded expenses in this display. Tradesmen of Automobile Row outside of the company pronounce this one of the most elaborate settings for automobiles installed in Michigan Avenue. The Lexington car is advertised by the slogan: "Minute Man Six," hence the same phrase is used as the basis of the display.

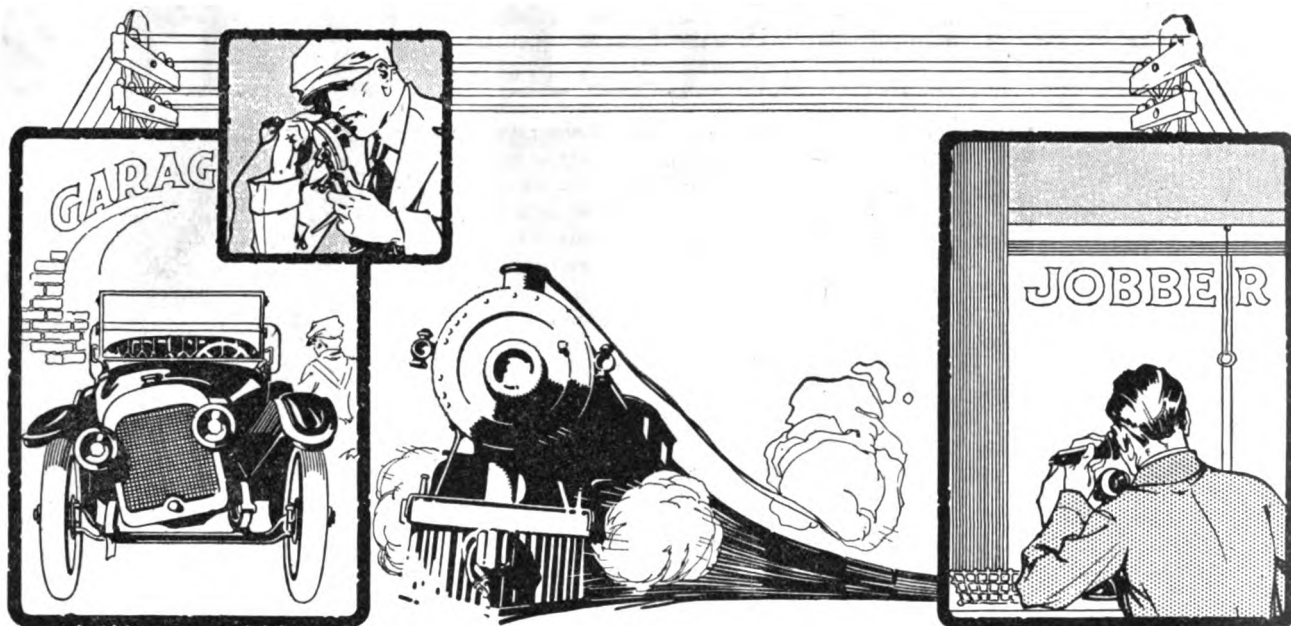
A "Minute Man" (wax figure) attired in khaki with rifle and military equipment is posed at the side of a road at the front. This is suggested with a panorama painting, height nine feet, entirely surrounding the enclosure at the rear and sides.

The floor is covered with paper painted to show rocks, shrubbery, side drain and pavement, all standing out in relief so that the painting is continuous without a break from the top line of the background out to the glass. Note the tent and the tripod with pot suspended over the fire at the side of the "Minute Man" and the pose of the rifleman in the same manner as the advertising pictures. An officer (wax figure) is seated at the steering wheel of the car and the "Minute Man" sentry challenges him, as the inscription on the roadside sign reads: "Who goes there?"

"Lexington 'Minute Man' six," answers the officer.

"Pass 'Minute Man' six," says the sentry.

The painting is on wall board mounted in sections supported with wood framework. It approximates 600 square feet of surface. Any dealer might take one section of the background at the left front of the car containing the cut-out Lexington sign and reproduce this. He could use for covering materials assorted shades of green, brown, tan, sky blue, and white crepe tissue paper with a lithograph poster of a young man. This provides a scenic panel five by nine feet, with cost of materials and installation about \$10.00.



RUSH!

When the hurry-up order comes—when an excited customer rushes in and wants a new spring *at once*—when every minute counts—when you are placed on your mettle by a demand that seems almost out of reason— How will you meet it?

Will you simply hold up your hands and say "It can't be done?" Or will you

Get The Nearest Harvey Jobber On The Wire—

tell him your needs, and send the customer away pleased at the knowledge that his car will be on the road again, in better shape than ever before, within a few hours?

Make use of Harvey Service. It is designed to help you in emergencies.

There's a Harvey Jobber Near You

Drop us a card and we will send you his name and our catalog giving measurements, weights and sizes of over 900 different styles of Springs and other valuable information that you should have. Write today — you may need Harvey Help tomorrow.



Harvey Spring & Forging Co.
 922 - 17th St. Racine, Wis.

Another Great

This car will be exhibited at the Chicago Show—Space G24 to 49 in the Greer Building.



This car will be exhibited at the Chicago Show—Space G24 to 49 in the Greer Building.

By World's Champion Light Six 6,202 Miles With SEALED Hood, Clutch and Transmission

CHICAGO to the Pacific Coast and back—no CHANCE to touch the engine—no chance to even LOOK at clutch or transmission—that is the latest wonderful record of the ELGIN SIX.

The Valve-in-head Motor never faltering on the steepest inclines, in the deepest mud nor the heaviest sands—

The CLUTCH holding on

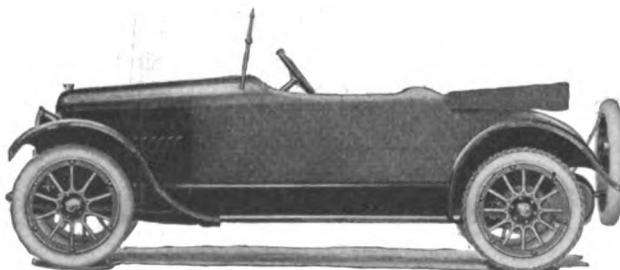
mile after mile of steepest mountain climbs—

The BRAKES holding fast on mile after mile of downward plunges—where slipping meant death—

What eloquent proof of the 100% *stamina* and *dependability* of this strictly stock ELGIN SIX.

And Economy—19.4 miles to the gallon of gasoline.

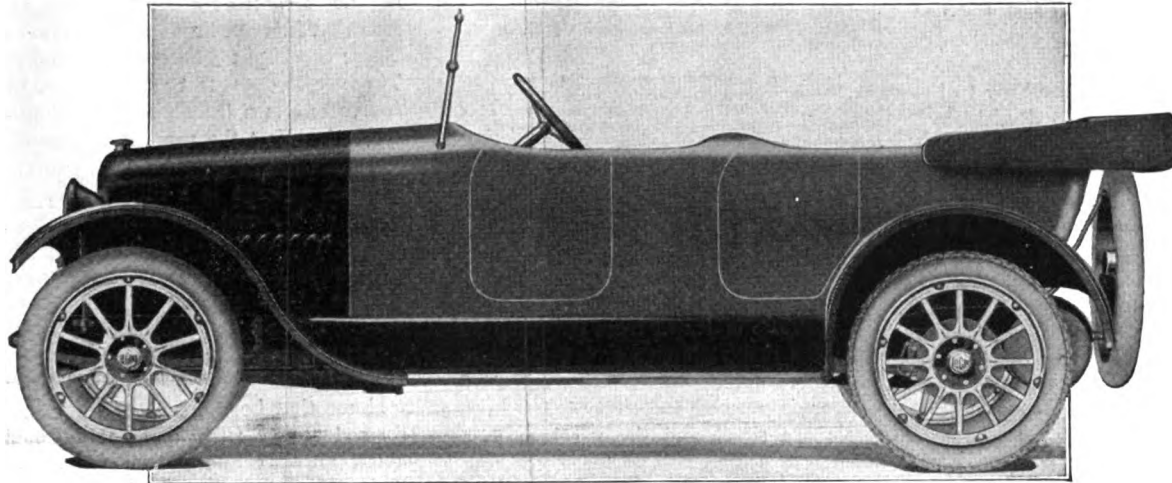
Elgin
Six



Elgin Six 4-Passenger Roadster, \$1095
F. O. B. Chicago

A car for business and professional use, as well as for all-round driving. Roomy enough for four people, yet not too large for one or two. Front seats divided. Beautiful yacht-line design. A popular, practical model. Same chassis as touring car, with 117-in. wheelbase, valve-in-head motor, etc.

Victory Scored



Elgin Six 5-Passenger Touring Car, \$1095 F. O. B. Chicago

A roomy, impressive car. 117-inch wheelbase. Valve-in-head motor. Quality upholstery and finish throughout. Flexible, powerful, smooth running and easy riding. The most economical car of its size. Beautiful, durable. A family car which old and young alike enjoy.

ENGINE, clutch and transmission performed *without adjustment—without repair*—for two solid months of continuous travel under the roughest usage.

The Elgin climbed and descended the precipitous slopes of the Rocky Mountains; threading its way along tortuous, rock-strewn mountain trails; plunging through unbridged streams.

Without a break the car ran perfectly in the freezing, rarefied atmosphere above the clouds; and cooled perfectly in 132 degrees of desert heat, where heavy pulling increased the difficulty of *keeping* a motor cool.

A broken fan-belt—compelling the car to travel a thousand miles homeward *with a still fan*—a performance almost unbelievable—added a crucial test.

The record-breaking run from Chicago to Miami, Fla., the Minneapolis-Fargo dash, and many other famous ELGIN winnings had fairly earned for the ELGIN the title of "World's Champion Light Six."

Hence, when the officials of the Chicago Motor Club determined to secure authentic data on the condition of the two great national highways—The Lincoln Highway and The National Old Trails Highway—they selected the ELGIN SIX because of its previous wonderful records. It was made the "Official Scout Car," traveling under the

auspices of the Chicago Motor Club, the American Automobile Association, the Detroit Automobile Club, and many other Associations affiliated in the Good Roads Movement of America.

In the Service of the U. S. War Department

But the greatest honor was conferred upon the ELGIN SIX when Secretary of War Newton D. Baker, in a personal letter, appointed it Official Scout Car to report trans-continental road conditions to the War Department—to gather information that may prove most valuable to the War Department in emergency movements of troops and supplies.

It was a commission of honor for the ELGIN. No car had ever been sent on an errand so important to this Government. No car had ever been charged with a service so distinguished.

Successful dealers are fast coming to the Elgin Six.

A highly profitable connection may be awaiting YOU.

Wire for territory and full details.

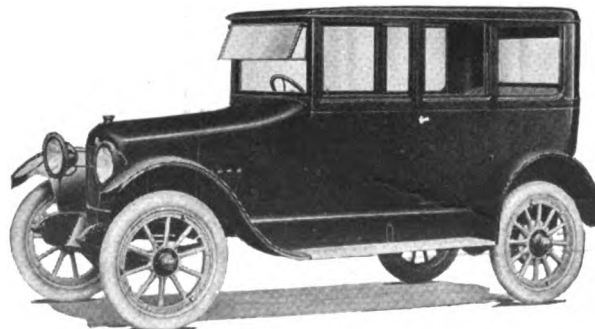
Address Dept. 11C

Elgin Motor Car Corporation, Chicago, U. S. A.

Elgin Six Sedan, \$1645

F. O. B. Chicago

A richly finished, luxuriously upholstered car that meets the all-season, all-weather requirements. Interior of best Bedford Cord. Plate glass windows. Silk curtained rear and rear quarter windows. Patented, adjustable steering wheel. Heavy Brussels carpeting for the floor. Electric dome light for interior.



Elgin Six

Mechanical and Engineering Problems

Installing Dash Primer on 1916 Studebaker

Question: Can you tell me how to install a dash primer on a 1916 Studebaker? There is practically no intake pipe on this model and the intake manifold is cast in the cylinder block. The engine is hard to start in cold weather and I would like to put on a dash pump with a small tank for high-test gasoline or a mixture of gasoline and ether to give it the first charge of gas. I am afraid to drill into the intake manifold on account of the water jacket. Can you give me an idea as to how to make such a primer or where one can be bought that is suited to this car?

J. G., Illinois.

Answer: About the only way you can get an easy entrance to the intake pipe in this case is to drill through the neck of the carburetor. I assume you have a Schebler model "R" on this car. It will be necessary to drill through both the inner and outer walls of the hot air chamber. If the walls are thick enough, the nozzle can be threaded in. If not, it will have to be soldered. Be sure to get an air-tight joint in both walls. After the nozzle is in it should be bent so that it points up toward the head of the cylinder block. This will not be as good as if the nozzle or nozzles were run into the intake manifold close to the

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

intake valves, but I think you will find it satisfactory.

The accompanying sketch gives a good idea as to how these devices are made. The gasoline is drawn from the small tank when the pump plunger is pulled out and forced through the nozzle when the plunger is pushed in. The holes in the nozzle are small and the gasoline passes through at a high rate of speed, forming a spray. In fact, the nozzle acts very much the same as the needle valve in a carburetor.

You can get the parts and make up this primer or you can purchase one complete. Your jobber can supply you or the advertising sections of any good publication will tell you where you can buy it. I believe you would get better results with high-test gasoline than by using ether.

* * *

Fixing Weak Cylinder

Question: We have an Overland car here that belongs to a party who is very particular. The car works pretty well, but

he knows something about engines and insists that it is not in perfect working shape. There is a slight difference in compression. Three cylinders test the same and the fourth one is a little weak—not enough to seriously affect the running, but enough to tell when pulled over with the crank. The gasoline mileage is a little higher than it ought to be and the owner blames this weak cylinder. We have carefully ground the valves and fitted the head gasket so we are sure there are no leaks, but have not been able to cut down the gasoline to amount to anything. Since this was done, the mechanic who worked on the car has told me that he noticed the weak cylinder seemed almost rusty and not polished for about an inch and a half from the top. This would indicate to me that the cylinder was not bored true.

Would you advise reboring the cylinder if this is the case? If we rebores it, would it be necessary to make a new piston?

Motor Co., Texas.

Answer: I am inclined to think you are right about the cylinder not being true. Be sure of this before having it rebored. If it is, you should be able to hear the escaping compression through the breather pipe in the crank case when turning it over by hand. As to whether a new piston will be necessary, it will depend upon how much larger you have to bore the cylinder. Possibly grinding will remedy the difference, and if so, it is probable that new rings, slightly heavier than the old ones, will do the work. In any event, the cost of a new piston would not be great.

Jersey Tradesmen Want Business on Cash Basis

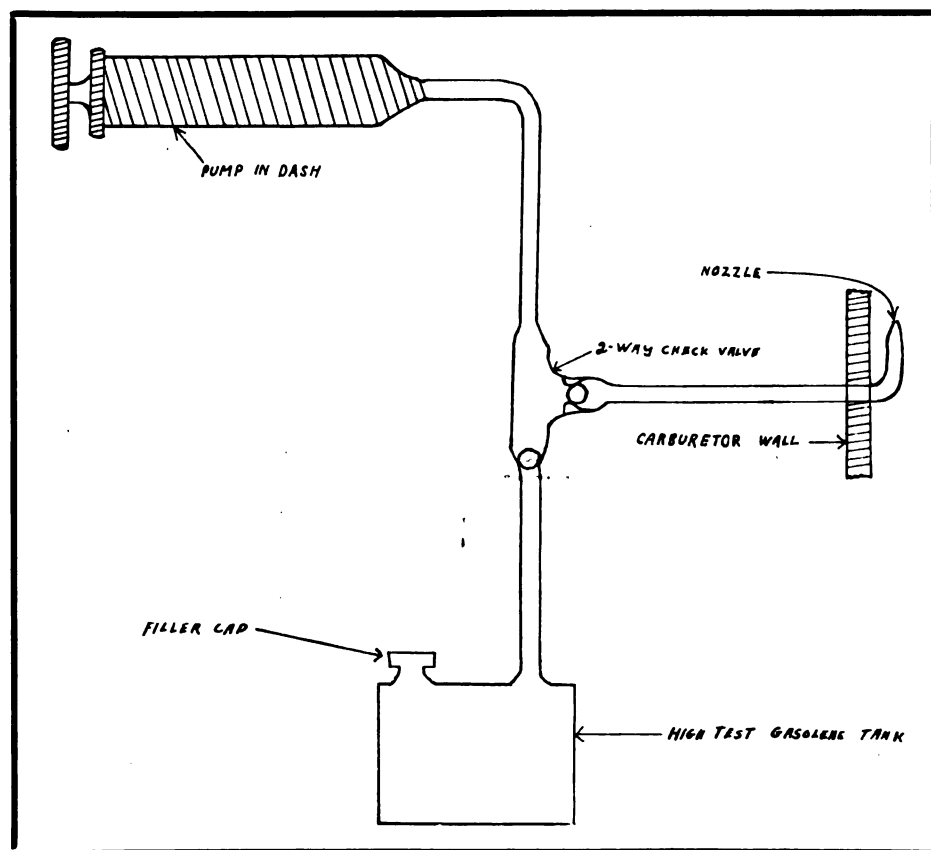
Believing as they do that this is a good time to put their business on as strictly a cash basis as is possible, the officials of the New Jersey Automobile Trade Association at a meeting held in Newark, N. J., last month adopted the following resolution:

WHEREAS, It is the desire of this association to co-operate in every possible way with our Government to the end that we shall win the war, and as it is our paramount duty to assist in the conservation of the financial resources of the nation, and inasmuch as our Government has suggested that simplified methods be inaugurated in handling our affairs, and that capital be kept in a liquid condition, be it therefore

RESOLVED, That we recommend to our members that, beginning January 1, 1918, they discontinue the practice of carrying open accounts in all departments of their business.

(Signed)

NEW JERSEY AUTOMOBILE TRADE ASSOCIATION.

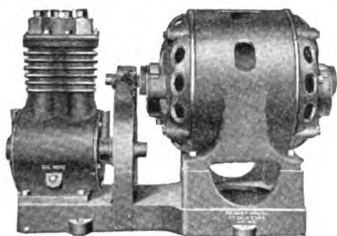




THE BRUNNER GARAGE AIR COMPRESSOR EXHIBIT

AT THE CHICAGO SHOW WILL OCCUPY SPACES Nos. 203, 204, 205, 206, 207 and 208.

A competent force of engineers and sales representatives will be in attendance to explain our line to the visiting Jobbers, Garagemen and Motorists, and whether or not you are selling or using Brunner equipment our representatives will be glad to assist you in solving your compressed air problems. We extend you a cordial invitation to visit our Exhibit at the Chicago Show.



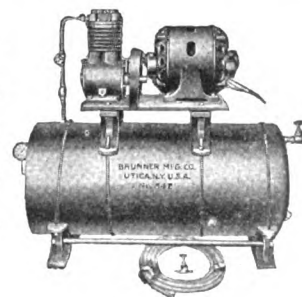
Proper tire inflation means more mileage and smoother riding—Brunner Service insures proper tire inflation.



The Brunner Sign is a sure sign of prompt and efficient compressed air service—are you Brunnerwise?

INVESTIGATE THE **BRUNNER** AIR COMPRESSOR

Every Jobber, Garageman and Motorist who is not Brunnerwise should investigate the Brunner Garage Air Compressor—he should give the compressed air problem more thought—he should know just as much about the air that goes into the tire as he does about the oil that goes into the motor—it is just as important.



Our New No. 15 Catalogue is ready for distribution—send for it today—and let us send you the name of the Brunner Jobber covering your town.



The Brunnerwise
Garageman

BRUNNER MANUFACTURING COMPANY

BROAD AND GILBERT STREETS

UTICA, N. Y.



The Brunnerwise
Motorist

Welding, Cutting and Brazing

Welding Small Holes in Aluminum Crank Cases

Question: I read with interest your method of "casting in" patches in aluminum crank cases. I infer that it is more economical to "build in" the small holes with the welding torch; that is, holes smaller than two inches across. Is this correct? If so, please give through the columns of the magazine a handy method of doing it. —Mike, Kans.

Answer: For holes of the size mentioned it is not the cheapest to "cast in" the patch, because it requires but little more welding gas and about one-third of the time to fill the holes with the torch and welding rod.

One method which is rapid and economical is to cut or break out a piece of an old cast-off crank case to about fit the hole in the case you are to mend. Aluminum is easily cut or broken and may be readily made a good fit in the hole by the use of a hacksaw or chisel. Wedge this makeshift patch in place with a bit of aluminum, then "sew" it around with the flame after the case and patch have been preheated to the required temperature. The one drawback to this method is the fact that there is more often no old casting handy. It is a good plan to save several pieces of any old junk aluminum castings that may come to the shop, for just such an emergency.

Another method of welding small holes: Cut a piece of 16-gauge galvanized iron an inch or so larger than the hole and bend it to conform to the shape of the inside of the broken casting, back of the hole. Wedge this piece of iron in place on the inside of the case with short pieces of iron rods braced against the opposite side of the case. Or it may be fastened in place with a few small stove bolts by drilling holes through the case and galvanized iron around the patch hole. The small holes may be spot welded after the main weld is finished. After the piece of iron is fastened in place, weld in circles around the hole, gradually drawing in to the center. The success of this method depends mostly upon the deftness and rapidity with which it is accomplished. Make the welding continuous and rapid once it is started and keep the heart of the flame away from the galvanized metal.

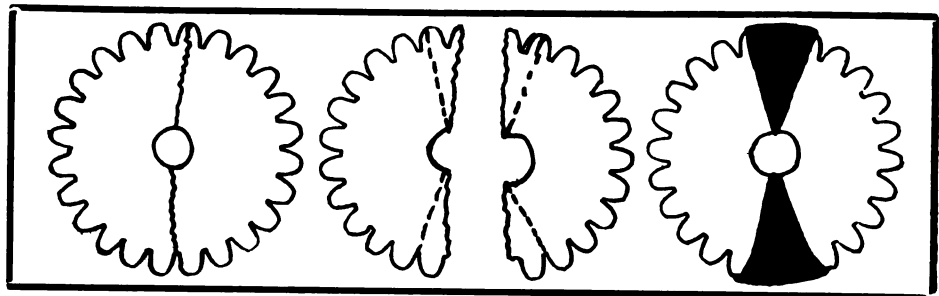
In other words: Simply melt a layer of aluminum over the iron, the same thickness as the case, and thoroughly mixed and joined with the edges of the hole. When welding aluminum, do not "fuss around" with it, but keep working onward; then go back and fix the troublesome spot after the weld is finished.

What recommends this second method of filling holes is the fact that the welding may be done on a case that is almost cold. Or in other words, but very little if any preheating is necessary—the amount depends upon the dexterity of the operator. This is due to the rapid cooling of the melted metal as it is spread over the galvanized iron. The iron acts as a chill which cools and sets the metal almost as fast as it is added. It is well for the novice to try out this method several times with the customary preheating before attempting to weld a cool crankcase.

* * *

Welding a Small Solid Automobile Gear Wheel

Question: How shall I go about welding a gear wheel? The gear is four and a half inches in diameter, two inches wide, and is a solid wheel with a one-inch hole in the center. It is broken in two pieces, across the middle, caused by attempting to use a key too large. Shall I preheat a job this small?—Beginner, Texas.



No. 1.

No. 2.

No. 3.

ILLUSTRATION FOR GEAR WHEEL WELDING.

Number 1 shows the broken gear with the break running through one tooth and between two others. Number 2 shows how the beveling is to be done. Cut the metal back to the dotted lines, the full width of the wheel. Beveling is best done on an emery grinder. Number 3 shows the new metal added as represented by the black spaces. Note the number of teeth lost and the excess metal added.

Answer: To the last question first: It is unnecessary to preheat a casting of this shape and size; the expansion is equalized and confined to too small space.

In the first place it is not economy to weld this wheel, for the reason that we are bound to lose several of the teeth. The cost of machining alone on these teeth would be as much as a new wheel would cost. This, added to the cost of preparing the job for welding, would seem to make welding prohibitive. There are instances, however, when the time saved to the customer would pay for a dozen wheels.

The first thing to do is to bevel each half of the gear as shown in the sketch. Notice how the beveling destroys the teeth, all of which will have to be milled out after the weld is finished. Now clamp the halves together, leaving the center hole clear. Suspend the clamped gear on a rod having both ends resting in V blocks, or other contrivance which will permit the gear to be re-

volvied on the rod.

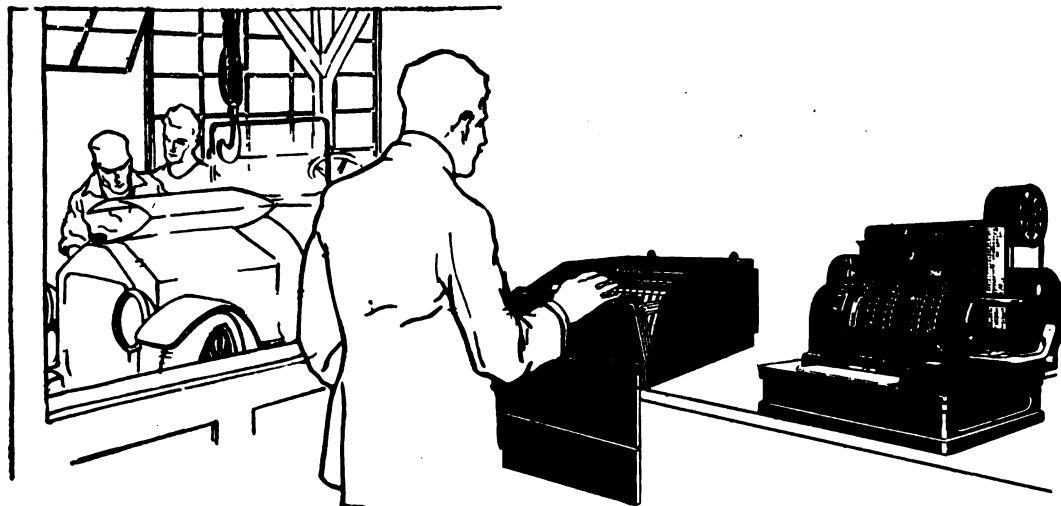
Use a soft cast-iron filler (supposing the gear to be made of cast iron) with borax as a flux. Weld about a third of one of the V's formed by the beveling. Turn the wheel and weld a third of the other V. Turn again and weld another third of the first V; then the second, and so on until both are filled. Pile up an excess of metal in both V's as shown in the sketch. This excess metal gives better insurance of solid metal in the teeth after they are milled, because of the tendency of dirt or slag to float to the surface of melted metal. We weld a little of each side at a time to prevent any chance of the wheel being pulled out of shape by contraction, which could happen if so much filler was melted into one side at one time.

Use borax continually throughout the welding process by dipping the melting end of the filler in it frequently. In this way we cause the slag to float to the surface more readily where it may be scraped away. As with most jobs of welding, rapidity is an essential feature of this job. Work

deftly, but be sure the new metal is thoroughly mixed with the old, and that each successive layer is mixed with the previous one. If care is taken at the beginning, the center hole will not have to be rebored, but may be dressed out with a round file.

While welding always keep the flame in motion, revolving in tiny circles from one end to the other of the groove. Keep the filler melting into the body of the weld except when using the flux.

"Service" never did stand for free labor in the minds of sane motorists. Unless you educate your other customers to this fact your service department will keep on being a needless expense.



Up-to-date System for Garages

Electrically Operated National Cash Register

Greatest labor-saving machine for garages and service stations.

It does 15 things in three seconds.

It gives a separate record of money received for storage, tires, oil, gas, repairs, etc.

Advertises your goods direct to your customers.

It does quickly what helpers can't do.

The New N. C. R. Credit File

Cuts out all bookkeeping of customers' accounts.

No customers' ledger, blotter or daybook.

Every customer's account balanced to the minute.

Complete record with one writing. Saves time and work.

Customers like it; it saves their time.

Prosperity is increasing. Hence don't delay.

Order now and get the profits which our system will make for you.

It more than pays for itself out of the money it saves. Sold on small monthly payments.

Old cash registers repaired, bought, sold, rebuilt and taken in exchange for new registers.

To Dept. 33,
National Cash Register Co., Dayton, Ohio

Please send me full particulars of
your latest model cash register
and the new N. C. R. credit file.

Name _____

Business _____

Address _____

Get the benefit of these prosperous times.

Cut out this coupon and mail it today.

Give the AMERICAN GARAGE and AUTO DEALER Credit When Writing Advertisers

The Law *and* The Garage Trade

Collecting a Repair Bill

Question.—I have done some repair work and replacing on a wrecked car, but the owner refuses to pay my bill. He says my charges are too high and seems to think the maker's guarantee entitles him to get parts for nothing, as his accident happened in less than three months after he bought his machine. What can I do?

R. J. L., Missouri.

Answer.—Payment for your work and material may be enforced against the car owner and cannot be enforced against the company from whom the car was bought. If the owner has a guarantee that is a matter entirely between him and the company he purchased from.

* * *

Lien for Supplies

Question.—How can I collect a bill for storage and supplies? If I allow the car to leave my place can I seize it later without going to court?

R. C., Georgia.

Answer.—Your lien under the law of most states ceases when you give up possession of the car and then your only remedy is by suit in the usual way to collect.

THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the Nat'l Auto Retail Trade Ass'n (A. A. G. O.), and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.

In New Jersey the law provides for retaking possession without legal process, but so far as we are informed this is the only state where that can be done.

In some other states your lien will continue after car leaves your possession and may be repossessed by proper action.

* * *

Graft Payments

Question.—Can I recover commissions paid to the former driver of my service truck? I have learned he got this money several times when he had to have gasoline or oil on long trips he made to tow customers' cars back here to my garage.

H. W. D., New York.

Answer.—As we understand your question some one gave your former driver money (in the nature of graft) for purchasing oils and gasoline to be used on

you are taking a real interest in the customer.

"I have a practical knowledge of law



Miss Marian Hogan.

pertaining to the garage business, particularly as to what we can and can not do. I also have a good knowledge of tires, having studied upon the different kinds that

your car. Unless exorbitant prices were paid and in that way you were overcharged, you cannot recover.

* * *

Wife Must Consent

Question.—A man gave me a deed to a lot in exchange for an old car I sold him. When I tried to sell the lot I found his wife refused to give her signature, although she is not living with her husband and was not when he acquired the lot. Can I make her release her claim?

F. H., California.

Answer.—No, unless she agreed to do so at time car was sold to her husband.

LEGAL NOTE

Attorney General Gregory's holding that the aircraft patent pooling plan to prevent patent litigation does not violate the Sherman anti-trust law clears away a possible serious obstacle to the government's \$640,000,000 aircraft program. The opinion gives legal approval to the agreement between the aircraft production board and the Airplane Manufacturers' Association and ratifies the work done by the board and the advisory committee for aeronautics. It will insure the employment of the entire airplane producing capacity of the country on the program.

"Garage Girl" Advises Others to Study Task

The "Garage Girl," to whom enthusiastic praise was accorded by P. J. Anderson of Los Angeles, Cal., in our November number, is Miss Marian Hogan. In a letter to the AMERICAN GARAGE & AUTO DEALER Miss Hogan writes:

"I am the bookkeeper for four garages, two of them being the largest west of Chicago, all run by the same owners, in the heart of Los Angeles, Cal. Along with my regular customers I have hundreds of tourists in the winter time that require a great deal of attention. Our garages are located so that we catch all the trade from all the leading hotels and large office buildings.

"I must say that the tourist trade is a far different one from the regular customers. They visit the office for everything that they wish to know in the way of roads, amusements and places to go. This takes up considerable time, but I always make them feel that it is a pleasure to be their informant.

"Furthermore, I cultivate a memory for faces and names and I'll venture to say that there is not one man out of a hundred, after I have handed him one statement or invoice, but what I can call him by name when he enters the office again. This particular thing I have been congratulated on many, many times; this I think means a great deal to the business, for it shows that

are made. I can talk quite intelligently on any particular kind, and in this way I very often take the order for them in preference to the regular man.

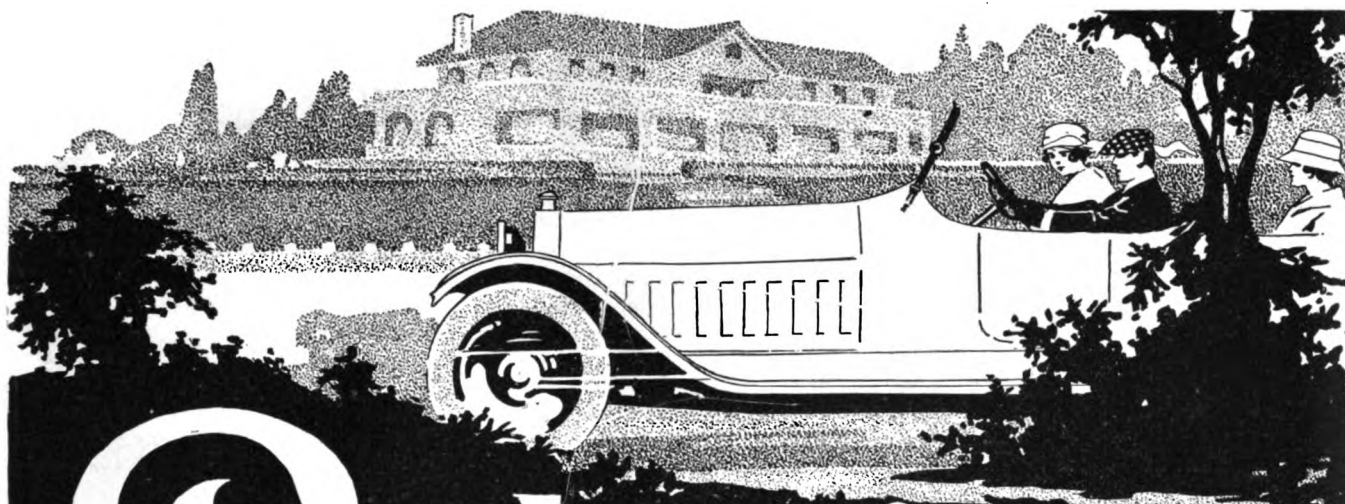
"I trust that my letter will help the girls along. I hope that some of them will get busy and study along other lines as well as along the lines that they are getting a salary for, as this has been a great help to me in the way of promotions."

Muskegon a Motor Center

Great success is predicted for this year's second annual automobile show at Muskegon, Mich., the week after the Grand Rapids exhibition. The automobile industry is a big help to Muskegon and a munitions factory is working on a \$5,000,000 contract. The city is the home of the Continental Motors Co., the Motor Specialty Co., the Piston Ring Co., the Valveless Motors Co., the Muskegon Automobile Truck Co., the Curtis Tire Co., the Brunswick-Balke Tire Co., and other industries dependent upon the automobile trade.

Scranton Space Leased

All of the floor space, 50,000 square feet, has been leased for the eighth annual automobile show to be held in the Thirtieth Regiment Armory at Scranton, Pa., January 21 to 26. Hugh B. Andrews, manager for the Scranton Motor Trade Association, expects about 200 vehicles to be shown.



Polarine

THE PERFECT MOTOR OIL

Carbon Accumulation

Is the Motorist's Chief Cause of Trouble.

Few motorists know that poor lubricating oil is one of the main causes of carbon formation in the combustion chamber.

Red hot carbon on the top of the piston, in the combustion chamber and adhering to the plugs, fires the gasoline vapor too soon, and causes an erratic engine which misses skips and knocks. For correct lubrication use

*For
Any Make
Car*

Polarine

THE PERFECT MOTOR OIL

*At Any
Motor
Speed or
Temperature*

Polarine is so constituted that it is not broken down by heat or thickened by cold. It flows freely at zero, yet under driving conditions, when the temperature of the cylinder walls is 300 to 400 degrees Fahrenheit, its "body" is practically identical with the so-called heavy oils.

Bear in Mind you cannot change lubricants with every change of temperature. Therefore, choose Polarine, the lubricating oil for any make of car, which stands up to every temperature, and to every engine condition.

STANDARD OIL COMPANY
72 West Adams Street (Indiana) Chicago, U. S. A.

240

Cleveland Tractor Designed for Farm and Industrial Use

Industrial use, in the service of manufacturers around their factories, is one of the features of the Cleveland tractor. This machine was designed by Rollin H. White, who was responsible for the design of the White gasoline motor truck, for use both as a substitute for horses on farms and also as a valuable portable power vehicle for various industrial purposes.

The Cleveland tractor is a caterpillar machine and the moving track provides 690 square inches of traction surface which conforms to the unevenness of the ground as it is laid down. K. P. Drysdale, former advertising manager for the Cadillac Motor Car Company, and now sales manager for the Cleveland concern, declares the Cleveland tractor will not mire or pack soil over which it travels. Its crawler-like traction surface enables it to travel

is president of the American Automobile Trimming Company, which has plants at Detroit, Cleveland and in Canada. Before moving to Detroit ten years ago, Mr. Gottfredson was head of one of the largest wholesale hardware firms in Wisconsin.

"In spite of the war and other heavy demands on the pocketbook of automobile purchasers," said Mr. Gottfredson, "Saxon has shown a gain in sales each month over previous months. Today we have more unfilled orders at the factory than in any previous time during the last six months.

"The prospects for the coming year are very bright. They are so substantial, in fact, that we are rushing the work on our new plant in preparation for the spring business. Rather than retrenching, we are branching out, and the new plant, which will completely house the Saxon in fresh and specially constructed quarters, will be finished as rapidly as the contractors can do the work."



CLEVELAND TRACTOR WORKING ON HILLY GROUND.

smoothly over wet ground, ditches and loose sand. The machine is small enough to be used in orchards, yet is powerful enough to plow from eight to ten acres a day with two fourteen-inch plows.

Because of its low center in gravity and its length of traction surface it can be used on hilly farms. One instance of this is shown in the illustration which accompanies this article. The Cleveland tractor is built to deliver twelve horsepower at the drawbar and twenty horsepower at the pulley. Its power is derived from a high speed, heavy duty four cylinder motor.

Benjamin Gottfredson Is New Saxon President

Benjamin Gottfredson has been elected president of the Saxon Motor Car Corporation, of Detroit. He is a Detroitier and has been interested in the Saxon concern since it began business. He organized and

Hughes Engine Heaters Fit Close to Radiators

"If there is one thing that must be made right, that is an electric automobile engine heater," said Ernest W. J. Hughes of D. C. Hughes & Co., recently. "We realized when designing our heater that it must have three essentials—proper shape, a carefully tested heating element and a strength that would stand a great deal of abuse as well as use. Therefore, we made ours in the form of an oblong square to fit close to radiators.

"We have applied for patents on six different kinds of automobile engine heaters. Our 'Elektroford' heater, which is made a part of a Ford car, is ready for the market. Without boring a hole or changing a bolt, this heater becomes a part of the circulation system of a Ford car and the water in the engine and radiator gets warm and circulates constantly. The heater is connected by wire to the dash board and to start it going the driver only has to plug in a switch from an electric light circuit."

Day and Night Signs Reproduce Trade Marks

Electric signs of distinctive design—signs in which it is possible to reproduce trade-marks and the unique lettering of trade names—are being offered to the automobile trade by the Flexlume Sign Co., Buffalo, N. Y. Already a number of the well-known names and marks are blazing forth in the Flexlume raised white glass characters which are distinctively theirs.

There is that well-known circular trademark of the Hood Tire Co., the type of lettering which marks the Willard storage battery station the world over, that strong script by which Overland is known, the familiar lettering of the Ford trade name, Buick, Dodge Brothers, Saxon—there is no end to the list of car builders who are taking advantage of this form of electrical advertising.

The reasoning behind the exact reproduction of well-known trade names in Flexlume letters is that these signs actually tie the national advertising of the manufacturer to the dealer's location. Thousands of people read national advertising promoting a particular passenger car. They see the same claims, the same trade name, time after time, and gradually they become convinced the car is a good one.

But there is nothing in the advertising to tell where the car can be bought. That is where the Flexlume sign comes in. If the dealer has that same trade name blazing across the front of his location in clean-cut Flexlume characters of raised white glass the passer-by connects it with the advertising he has been reading. He will never need to be told where that car can be bought.

There is another advantage in Flexlume signs for this particular work—they are day signs as well as night signs. Their raised white letters on a dark background stand out in a way that cannot be overlooked.

The Flexlume Sign Co. has prepared a little four-colored book which tells about their signs and shows many designs. It will be sent free for the asking if the AMERICAN GARAGE AND AUTO DEALER is mentioned.

Trade Thrives in Omaha

The automobile industry has gone to the front at Omaha, Neb., as figures compiled by the Omaha Commercial Club show it stood at the head of the jobbing business for 1917. Clarke G. Powell, secretary-treasurer of the Omaha Automobile Trade Association, says the record will be bettered in 1918.

The figures for 1916 and 1917 are:

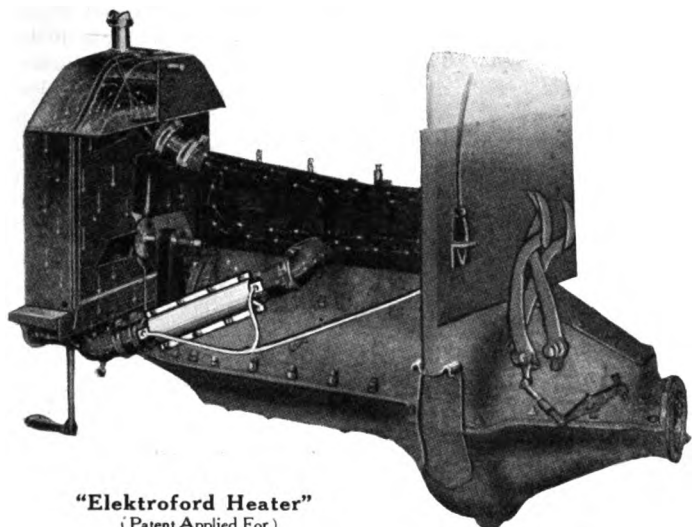
	1916.	1917.
Automobiles	\$25,660,134	\$39,814,157
Automobile supplies	4,347,000	7,713,873

Subscribers who mention AMERICAN GARAGE & AUTO DEALER in writing advertisers are guaranteed good treatment. No doubtful advertising is accepted.

The Elektroford Engine Heater

BECOMES PART OF A FORD WITHOUT ALTERING OR MARRING ANY PART OF CAR.

THE FORD MANUAL STATES: "The cooling apparatus of the Ford car is known as the Thermo-syphon system. It acts on the principle that hot water seeks a higher level than cold water—consequently when the water reaches a certain heat, approximately 180 degrees Fahrenheit, circulation commences and the water flows from the lower radiator outlet pipe up through the water jackets, into the upper radiator water tank and down through the tubes to the lower tank, to repeat the process.



"Elektroford Heater"
(Patent Applied For)

Based on This Correct Principle

The D. C. HUGHES & CO. "Elektroford" heater for cold weather simply continues the operation described above, while the car is lying inactive in a cold garage, therefore the engine keeps warm and when needed is just as it was when it was left, HOT, and ready to start off at the first turn of the crank.

DIRECTIONS

To install clamp heater firmly to lower radiator outlet pipe as shown in cut, fasten terminals to dash board and connect wires carefully. Plug in any electric light socket, alternating or direct current. Keep radiator well filled with water.

\$3.50

List price complete with 10 ft. cord.

LIBERAL DISCOUNTS TO JOBBERS AND DEALERS

D. C. Hughes & Company

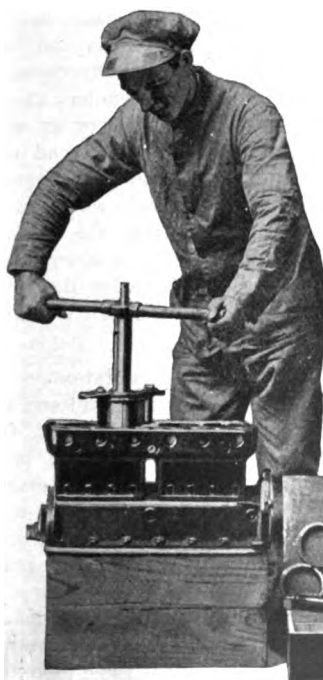
MANUFACTURERS OF THE "ELEKTRO" BRAND

A complete line of Electric Percolators, Toasters, Flat Irons, Stoves, Toy Ranges, Automobile Heaters, etc.

4642-44 Ravenswood Avenue

CHICAGO

STORM & O'HAIR CYLINDER REBORING MACHINES Will Make YOU BIG MONEY



Present War Conditions Make Old Motors Valuable.
They all need reboring and rebuilding sooner or later. Hundreds of these are in your locality and need your attention.
Equip to do this work and it will come to you. Get in the game while it is highly profitable.

Don't deliberately send this work, which is rightly yours, out to others; do it yourself and put the profits in your own pocket.

STORM & O'HAIR CYLINDER REBORING MACHINES.
Are practical and a highly efficient equipment with which any repair shop can handle this profitable work.

No shop, large or small, complete without one.
It will save you time and money; keep your shop busy and make extra profit for you.

Make second hand cars valuable. Don't handle them at a loss. Make a real profit.

Our Machines Cover All Requirements.
Hundreds are in daily use in all parts of the United States and foreign countries.

THE STORM REBORING MACHINE.
Rebores all types of motors, automobiles, trucks, tractors, motor-cycle and stationary engines of all sizes now in common use.

THE STORM & O'HAIR MACHINE FOR FORDS.
The most popular and successful Reboring Machine for Fords now on the market. Put out especially for Ford repair shops but will re-bore other 3% detachable head motors and being adjustable can be made suitable for other work should occasion require by the addition of extra parts.

Our Machines will increase the popularity and prestige of your shop.

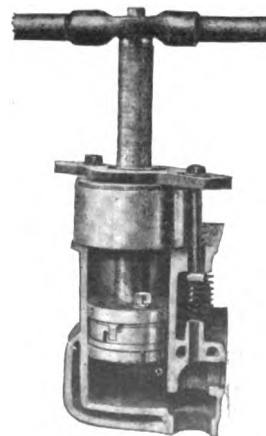
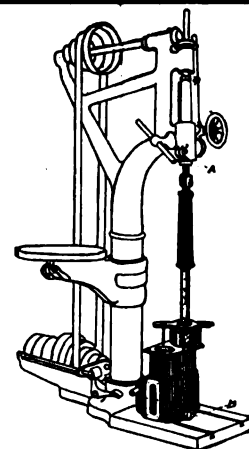
Equipped for operating by hand but can be furnished for operating by drill press as shown.

For Sale by Leading Jobbers.

We furnish pistons for all makes of motors.
Write today for literature and prices.

STORM MANUFACTURING CO.

THOMPSON, IOWA



The A.A.G.O. and its Activities

Should Retailers' Associations Pay Their Own Way?

The Ohio State Automobile Trade Association, at its recent convention, took on a new lease of life and started out with a financial backing and status that may be regarded as exceedingly promising. Many garagemen and dealers paid their 1918 dues and quite an imposing list of jobbers and manufacturers subscribed to a fund to help start the rejuvenated association on its way rejoicing.

This situation raises the query found in the caption of this article. It may be said that the chief reason which impells retailers to organize is that of obtaining a square deal from other branches of the trade and the public, and that a jobber-controlled or manufacturer-controlled organization will lack vigor and vitality in dealing with matters that are at issue between retailer and jobber and retailer and manufacturer. A divided loyalty on the part of the officers of a retail organization which attempts to serve both its members and contributors from other branches of the trade is likely to place the activities of the organization under suspicion and weaken every effort put forward by the organization to improve the condition of its members and the retail trade as a whole.

And Why Not Contribute?

On the other hand, the question naturally arises as to why a jobber or manufacturer who favors square dealing and is a real friend of the retailer should not show his friendship by contributions to the retail association's treasury? If wholesome, healthy, retail conditions benefit jobbing and manufacturing business, why should they not aid financially in bringing about those beneficial conditions? It is true that the hypocritical friend is likely to come forward and attempt to bribe his way into the good graces of the retailers, but cannot the machinations of this sort of person be carefully guarded against?

The question under discussion is indeed a broad one. It is not a new one. This writer has had experience with it in other lines of trade and is able to formulate some valuable and safe rules as applied to outside contributions. They are:

Rules That Apply.

1. The association should have a well-defined and vigorous policy as applied to buying, selling, profits, the retailers exclusive field, etc., and maintain it at all times, accepting financial aid from no firm that is not a loyal supporter of that policy.

2. See that you have officers who will stick to the policy laid down and not

swerve a hair's breadth in favor of any jobber or manufacturer whose business methods violate that policy and to that extent trample upon the just rights of the retailers.

3. Always keep in mind the fact that the best plan of financing a retailers' organization is for the retailers to "pay the freight" and not be beholden to any jobber or manufacturer for a dollar of the wherewith to keep the machinery of your organization in operation.

Accept donations from jobbers and manufacturers which are offered in the right spirit when conditions make it imperative in getting a start, but look forward to the time when your organization will be self-supporting, independent and, we believe, more fearless than it could otherwise possibly be.

Some Experiments.

We can point to some disastrous experiments in financing from the outside. Two years ago an aspiring national organization in our own field arranged to be financed by a firm of fire insurance brokers. They were to secure members for the organization in all parts of the country at no cost to the organization and make a profit for themselves out of the operation by selling insurance to the members. The plan failed because the association did not prove profitable as an insurance agency adjunct. This particular association effort failed because the retailers did not support it as they should have done, but counted too much upon the help of rank outsiders.

A. A. G. O. The National Automobile Retail Trade Association

29 S. LA SALLE ST., CHICAGO
Telephone Randolph 3051



OFFICERS 1917-18

E. A. SWENDSON, Pres., Milwaukee, Wis.
W. J. BUBECK, 1st Vice Pres., Philadelphia, Pa.
P. J. HUNT, 2nd Vice Pres., Ocala, Fla.
S. B. GREEN, 3rd Vice Pres., Day Tona, Fla.
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DEPARTMENTAL BUREAUS

Organization Collections Publicity Insurance
Employment Mechanical Legal Sales
Account's Cost Find'g Purchasing Information

AMERICAN GARAGE
AND AUTO DEALER
The Official A. A. G. O. Publication

This writer was connected with the big national retail association in the drug trade for eleven years and found that when it ceased to accept donations from jobbers, manufacturers and other outside sources and relied exclusively upon its own members for its support it gained a strength and solidity that it did not before possess. It will be so in the retail automobile and garage trade. Retailers should stand together, work together, fight together, for what is right and just, and build up on that basis.

Work to Do.

There is much standardization work to do, much in the way of business-like accounting, price and profit regulation, to be accomplished, all of which is educational rather than arbitrary fixing, and when such work appeals to far-sighted jobbers and manufacturers, as it should, we see no reason why they should not show their interest by giving it financial support. Beware, however, of the manufacturer who is overcharging you on price-fixed merchandise and, instead of reducing his price to a proper basis, gives your association or associations a few hundred dollars a year while he wrongfully takes from you many thousands a year. Beware, also, of the jobber who quietly slips into your territory and sells much of your most desirable consumer trade and then donates \$50 or \$100 to your local association in order to make you feel that he is a good fellow and has your interests at heart.

This article would not be complete or adequate in any sense if it ignored the practice so prevalent in many fields of "holding up" the manufacturer and jobber on the occasion of every convention, picnic or entertainment the retailers give for a cash donation, free goods or an advertisement in a program. It's a bad habit; it strengthens the notion that retailers should not pay their own way and that the two other branches of the trade are the legitimate prey for all manner of promotion exploitation. It makes the retailer parasitic in his thought, which is harmful in the extreme.

Retailers the Foundation.

As a matter of fact, the retail and service branches of the trade are basic, foundational; they stand next to the people. The prosperity of the retailer is essential to the prosperity of the jobber and manufacturer. Numerically he is the strongest of the three branches and more readily commands the attention of legislatures and the Congress. In merchandising matters he is the court of last resort in the business world; he only needs to be thoroughly organized to make his superior power felt.

A Master Electric Will DOUBLE Your Business



THE average motorist is a progressive individual and he appreciates progressive, modern equipment. That is one reason why he will go out of his way and pass up the hand pumps to have his car filled up at the Master Electric Filling Stations. **You will get twice the business if you have a Master Electric at your curb.**

Garagemen in all parts of the country enthusiastically tell us that their Master Electrics are bringing them more business than they ever dreamed of. The Master Electric is not merely a dispenser of gasoline but a tireless salesman and a standing advertisement. It will bring new trade to you and give you an opening thru which to sell the motorist all of his supplies.

Our time payment proposition puts the Master Electric easily within your reach; you can spread your payments over ten months if you desire.

Write today for full details on this fine business getting outfit.

MILWAUKEE Tank Works

151-201 Becher St. Milwaukee, Wis.

29 different types of gasoline and oil pumps and storage outfits.

Prompt shipments from warehouse in New York, Milwaukee, New Orleans or San Francisco.

Clip and Mail TODAY

Milwaukee Tank Works. 1.18

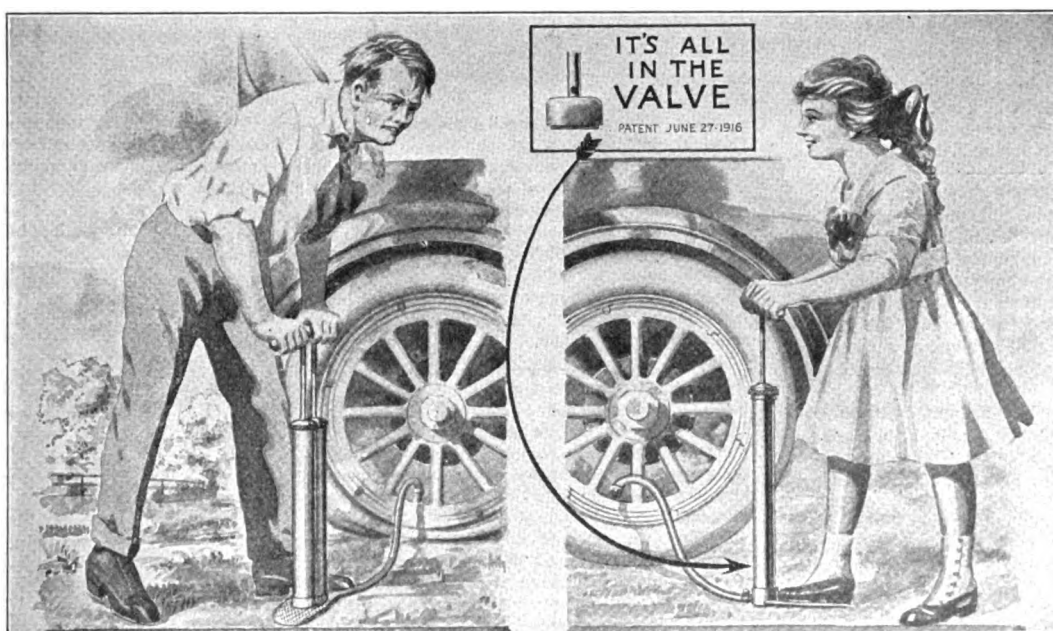
Gentlemen: Without obligation to me, please send me full information and complete prices on your Master Electric Filling Station,

Name

Address

City State.....

DID IT EVER OCCUR TO YOU?



He: Curse my luck, can't see why they'll put a pump like this in such a good car.

She: Gee, I'm glad Dad bought this ROSE PUMP or I'd sure be stalled.

JOBBER! DEALER! USER! More ROSE PUMPS actually purchased by dissatisfied users of out-of-date pumps last year than any other pump in existence. **There Is a Reason. Find Out Yourself. Write for a Sample.**

J. H. HANEY & COMPANY

HASTINGS, NEBRASKA

Manufacturers Rose Pumps, Grease Guns and Fan Belts

Accessories and Garage Equipment

MUELLER LOCK FOR FORDS.

The Mueller rigid steering wheel lock for Ford cars, manufactured by the Reliance Company, 411-417 South Sangamon Street, Chicago, jumped into prominence on being put on the market. It resembles other steering wheel locks in outward appearance, but is radically different mechanically. A new center pinion with a larger disc is furnished with the Mueller lock, which replaces the original Ford pinion. This disc is punched



to allow the lock-bolt to fit into it. The lock bolt being longer than the thickness of the disc extends down between two of the gears in the steering wheel gear case, and it is in this position when the car is locked. The lock cannot be removed when the car is locked, as it is absolutely impossible to unscrew it, the lock-bolt holding it secure as it extends through the disc and down into the gears.

When the car is to be unlocked a turn of the key draws the lock bolt up entirely away from the gears and disc and is held in this position, so that the car may be steered. Another important feature of the Mueller lock is that the center pinion is never disengaged from the other three steering wheel gears, therefore it is impossible to drive the center pinion down regardless of how hard one hits the nut in the center of the steering wheel, as you will be pounding on the solid Ford steering post.

Although the steering wheel and front wheels are locked in a rigid position it is possible to push a car equipped with the Mueller lock either forward or backwards.

NEW SCHRADER TIRE GAUGE.

In addition to the full line of accessories manufactured by them and including Schrader universal tire valves, tire pressure gauges, tire pump connections, tire valve repair tools and automatic shut-off valves for free air stations in garages, the firm of A. Schrader's Son will show a new tire pressure gauge for motor trucks at the Chicago show.

The new gauge has a bent foot or base which permits it being applied to the tire-valve of tires on heavy vehicles no matter how small the space between the hub and the felloe of the wheel. As the pressure in such tires must be very much higher than in tires on pleasure vehicles, the indicating sleeve of the new gauge is calibrated so as to register from 30 pounds of air to 170 pounds. This will accommodate tires up to 8½ inches.

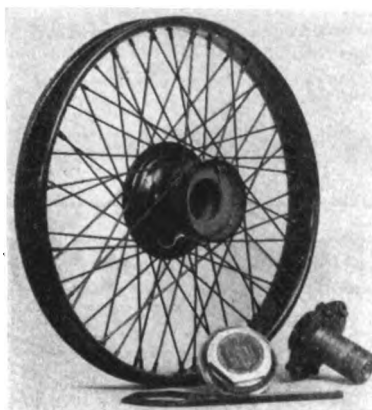
UNIVERSAL HOSE CLAMPS.

The Universal adjustable hose clamp produced by the Universal Industrial Corporation, Hackensack, N. J., can be used on hose or pipe ranging in size from one to three inches. The clamp ribbon has holes one-half of an inch apart along its middle portion,

for use in adjusting to various sizes of hose or pipe. Cross perforations between the holes facilitate bending the clamp ribbon into position. Excess stock can be broken off at a perforation after the screw has been tightened. The clamps are packed in cartons of fifty each with screw and nut ready to use. They are made in two sizes, styled "senior" and "junior."

PASCO WHEEL FEATURES.

Pasco quick-change wire wheels are said to have three distinct qualities uncommon to other makes of wood and wire wheels: First—A patented four series of rim punching and spoke lacing method of construction. All spokes cross four others in both the front and rear rows, forming a strong double web in the spoke lacing of the wheel hub and rims. Second—The hub cup is made of a strong metal that stands up in traffic collisions, where aluminum, brass and other soft metal compositions will strain or break. Third—The patented safe-locking hub cap locks itself and wheel on to the threads of inner fixed hub and axle. To remove the cap a safety lock must first be released and then a wrench used.



Pasco wire wheels, due to their heat radiation, their lightness at the rim, and their resiliency, are great savers of tires and gasoline. They add a great deal to the appearance of a Ford car. The wheels are interchangeable on all hubs of the car, and the hub caps all have right-hand threads. A complete set includes five 30x3½ plain clincher wheels, together with four inner hubs, four hub caps, dust cover for spare wheel, and wrenches.

ROMORT ENGINE CLEANER.

The Romort engine cleaner is not only useful in every public garage but convenient for the private car owner. By its use otherwise inaccessible places about the engine and transmission can be rapidly and easily cleaned by a kerosene spray that does the work as no amount of water would. The cleaner is constructed in such a manner that the air does not enter the tank but passes directly through the air tube, picking up the fluid at the extreme end of the cleaner, thereby eliminating all danger of explosion. The fluid is picked up at the extreme end of the cleaner tube and is driven in a spray against the parts to be cleaned. The long spout enables the operator to reach every corner. The capacity is two quarts which is sufficient to clean any ordinary car. The air may be supplied from any system, such as a

garage air system, or any good automobile tire pump.

SYRACUSE LOCK ENDORSED.

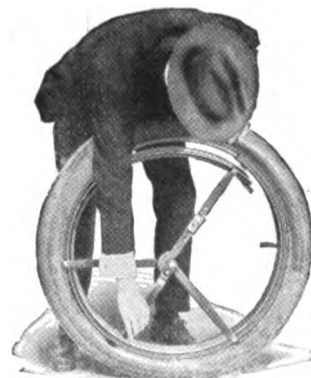
The new five tumbler Syracuse Ford lock, which has just been endorsed by the Underwriters' Laboratories, is of a design that is in many ways new in Ford switch locks. When the car is locked, the common contact strip through which the current must pass in order to get into the coils, is "grounded." This, the manufacturers claim, absolutely prevents getting a spark to the spark plugs by rewiring, installing a separate battery, or by any other means without the key.



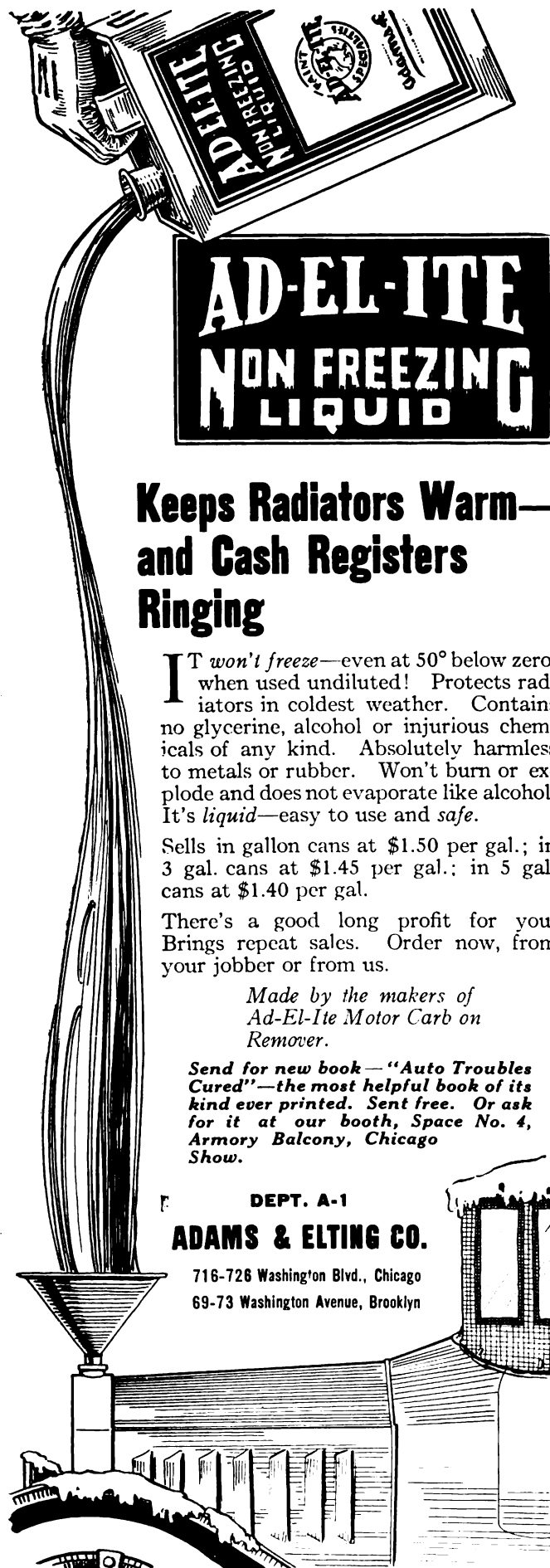
The lock, when in neutral is securely locked to the switch, independent of the lock casing screws, by a large screw which is made like a tap and is screwed into the key guide hole of the regular Ford switch. The coils are locked into the coil box by wedging. This allows them to be adjusted but not removed without the key. The lock has five tumblers, allowing many thousand different keys. It can be installed by anyone in five minutes. It fits both the old and the new Ford switches. Three nickel plated keys are given with each lock. It is manufactured by the Syracuse Universal Mfg. Co., 317 West Fayette St., Syracuse, N. Y.

LAWCO RIM TOOL.

The Lawco rim tool is so designed that it enables anyone to remove a tire from any demountable transversely split rim in one minute or less. The tool can be used to break open any sort of latch as well as to contract the rim or latch it in place.



The tool is made of forged steel. It weighs only five and one-half pounds and can be collapsed to fit any tool box. One arm is adjustable and can be extended so that the tool can be used on any sized rim. It is made by the F. H. Lawson Company, Cincinnati, Ohio.



Keeps Radiators Warm— and Cash Registers Ringing

IT won't freeze—even at 50° below zero, when used undiluted! Protects radiators in coldest weather. Contains no glycerine, alcohol or injurious chemicals of any kind. Absolutely harmless to metals or rubber. Won't burn or explode and does not evaporate like alcohol. It's *liquid*—easy to use and *safe*.

Sells in gallon cans at \$1.50 per gal.; in 3 gal. cans at \$1.45 per gal.; in 5 gal. cans at \$1.40 per gal.

There's a good long profit for you. Brings repeat sales. Order now, from your jobber or from us.

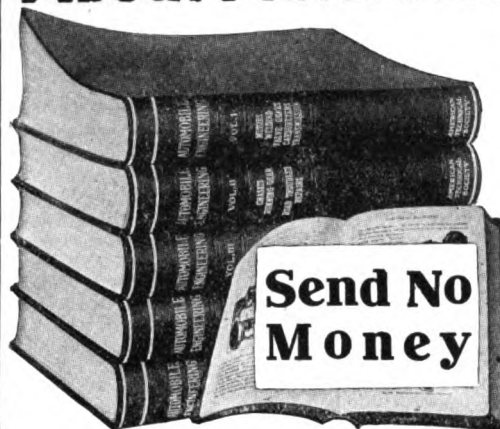
*Made by the makers of
Ad-El-It Motor Carb on
Remover.*

*Send for new book—"Auto Troubles
Cured"—the most helpful book of its
kind ever printed. Sent free. Or ask
for it at our booth, Space No. 4,
Armory Balcony, Chicago
Show.*

DEPT. A-1
ADAMS & ELTING CO.

716-726 Washington Blvd., Chicago
69-73 Washington Avenue, Brooklyn

These Books Answer Ten Thousand Questions About Automobiles!



5
Volumes
2400
Pages
2000
Illustrations
Tables &
Diagrams

You Need Them in Your Business

Every Garage man, every Dealer, every Repairman, every Car Owner needs this wonderful set of books—the most complete, practical, **helpful**, up-to-the-minute auto books in existence. They tell you—**instantly**—anything and everything you want to know about all kinds of automobiles and garage work.

Automobile Engineering

5 Volumes, Flexibly Bound in
Genuine Morrocco Leather, Gold Stamped

Recognized everywhere as the final authority on automobiles, their operation and repairing. Almost two entire volumes on latest Ignition, Starting and Lighting systems. 2400 pages (5% x 8 3/4") and 2000 illustrations, tables, diagrams, etc.

Everything About Automobiles, Including,

Explosion Motors
Welding
Motor Construction
and Repair
Carburetors and
Settings
Valves, Cooling
Lubrication
Fly-Wheels
Clutch

Transmission
Final Drive
Steering Frames
Tires
Vulcanizing
Ignition
Starting and Light-
ing Systems
Wiring Diagrams,
Shop Kinks

Commercial Garage
Design and Equip-
ment
Electrics
Storage Batteries
Care and Repair
Motorcycles
Commercial Trucks
Glossary

50c a Week

If you decide
to keep them

Just your name and address on the coupon brings the entire set for 7 days' examination. Pay only net shipping charges when they arrive. If you decide to keep them send only \$2.00 within 7 days and then \$2.00 a month—**50c a week**—until the special price of \$17.80 has been paid. This offer good within the boundaries of U. S. and Canada.

FREE Consulting Service With each set we give you free, a year's Consulting Membership in the American Technical Society. The regular price is \$12. Put your problems up to our Staff of Experts, for one entire year.

7 Days' Examination—Send Coupon

AMERICAN TECHNICAL SOCIETY,
Dept. A. 7861 Chicago, Ill.

Please send me the 5 volume Automobile Engineering for 7 days' examination. I to pay net shipping charges. If I decide to buy, I will send \$2.00 within 7 days and the balance at \$2.00 a month until \$17.80 has been paid. Then you send me a receipt showing that the \$25.00 set of books and the \$12.00 Consulting Membership are mine and fully paid for. If I think that I can get along without the books after the seven days trial, I will return them at your expense.

Name
Address
Reference

WORN BALL BEARINGS REBUILT.

When a bearing has worn out one set of balls it has only partially accomplished its purpose. Ball bearings have not lost their life sufficiently to be thrown in the junk heap when they have become loose or worn so they will not operate smoothly, as the temper and quality of the fine steel in the rings has not been affected. Conservation of America's high carbon alloy steel is materially assisted by having the ball grooves in worn annular bearings reground and a new set of special steel balls fitted.

The Pruyn Ball Bearing Works at Chicago and Philadelphia has made a specialty of rebuilding bearings for the last seven years. Special machinery was designed to give a perfect contour to the race ways and the makers of such machinery have since had this type universally adopted in the manufacture of new bearings.

MANLEY MACHINES GIVEN AWAY.

A novel contest has been arranged by the United Engine & Manufacturing Company, Hanover, Pa., for the Chicago automobile show. This concern will give away four machines, as follows: One Manley portable crane, one Manley engine stand, one Manley 22-ton press and one Manley 2-tank oil service.

These prizes are to be awarded to the four contestants who will give the best reasons why they want the respective machines for which they compete. Grammar and composition will not be taken into consideration in making awards. Herbert L. Towle of J. H. Cross Company, Philadelphia, and two other well known men will be the judges.

PEERS AMBU BATTERY STEAMER.

The American Bureau of Engineering has introduced the Peers AMBU battery steamer. The popularity of AMBU electric trouble shooter promises to be duplicated in this new time and labor saver for the garage man. It

is an apparatus for softening the sealing compound on starting and lighting batteries by means of steam, so that the battery may be opened easily and quickly and without the use of gas flame or blow torch.

The use of this apparatus eliminates almost entirely any possibility of damage to any of the delicate parts of the battery—and also guarantees a clean, quick job in removing the sealing compound. It consists of only three parts: 1—the steam generator, 2—the steaming box, and 3—the water supply tank.

PORTABLE WORK BENCH FOR FORDS.

The Ekern portable work bench embodies the features of a work bench and motor stand combined. It is designed for use in Ford repair shops although there are many uses to which it can be put in general repair work. It is provided with two large trays 22"x24" where the workman can place his tools, motor and axle parts. The stand is mounted on three 4" diameter wheels. The rear castor wheel is so constructed that by pulling the plunger jim the castor will swing up off the floor and the stand will then rest firmly on its legs. By kicking the castor lever the stand will go back on its wheels and lock automatically.

A Ford engine can be fastened to the stand by the two cap screws which hold the water inlet connection on the side of the motor block. The part fastened to the motor will revolve in the clamp on the stand, throwing the motor in any position or angle, where it can be retained by tightening the clamp screw. The bench is also equipped with a machinist's vise which has a 3" jaw with a 4" opening. This will handle any work required in overhauling a Ford motor or axle or other work of similar nature. The bench is 36" high, 27" by 42" floor space. Weight

120 pounds. It is distributed by H. G. Paro, 1410 South Michigan boulevard, Chicago.

PLATE GLASS WINDOWS FOR MOTOR CAR CURTAINS.

A successful method has been developed for installing beveled plate glass into flexible motor car curtains. Johnston beveled plate glass windows are set into wooden frames and cushioned at every point. They will not rattle, break, pull loose or sag and are water-tight. They do not interfere with the folding of top and curtains, replacing the sections of celluloid with glass.

They are manufactured by the William R. Johnston Manufacturing Company, 359 East Ohio Street, Chicago.

NEW FORD REAR BUMPER AND TIRE HOLDER ATTACHMENT.

Dealers who appreciate salable devices as winter business stimulators will like a new combination rear bumper and tire holder attachment being introduced by the Auto Parts Manufacturing Company of Milwaukee.

This combination is universal—fitting all types of Ford cars—touring, sedan, coupe and roadster—eliminating the necessity of carrying several styles. Both the rear bumper and the tire holder attachment are of new design. The manufacturers have introduced a new method of attachment, which is very simple as there is no machine work of any kind required, and there are no mechanical changes necessary.

The tire holder used in connection with this bumper has been constructed with the idea of carrying in a rigid, substantial manner, either one or two tires (including either size), one or two demountables or wire wheels. The tire equipment carried is held rigidly. Attractive literature on the combination is given to dealers.

The "TURNOVER" is there!**IN SALES** —as well as in mechanism**HEINZE
SPRINGFIELD**
cranking & lighting system
for FORD cars

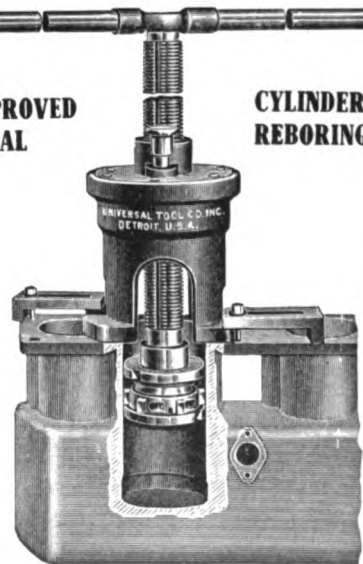
Comparative statements from 453 Ford dealers prove that more dealers are handling Heinze-Springfield than any other one make of starter, and that dealers handling the Heinze-Springfield with other makes sell far more Heinze-Springfields than any other kind. Comparison also quickly proves the Heinze-Springfield System the greatest value in its field. It is the only system for Fords selling for \$85, complete with Ammeter, Dash Light, Tail Light, Dimmers and Lock.

The Heinze-Springfield dealer arrangement is based on our conviction that the desirable dealer should realize worth while profits.

The John O. Heinze Company
Springfield, Ohio, U. S. A.

Real Points About the Heinze-Springfield System

1. A Two Unit, Six Volt, Single Wire Cranking and Lighting System, Bendix Drive.
2. Nothing visible with hood closed.
3. No interference with engine accessibility.
4. Installed complete in four hours.
5. No power drain on motor.
6. Patented mounting plate and chain adjustment insures quietness. Prevents broken chains.
7. Highest quality, most compact, most convenient combination Dash Switch, Ammeter, and Dash Lamp.

**THE IMPROVED
UNIVERSAL****CYLINDER
REBORING TOOL**

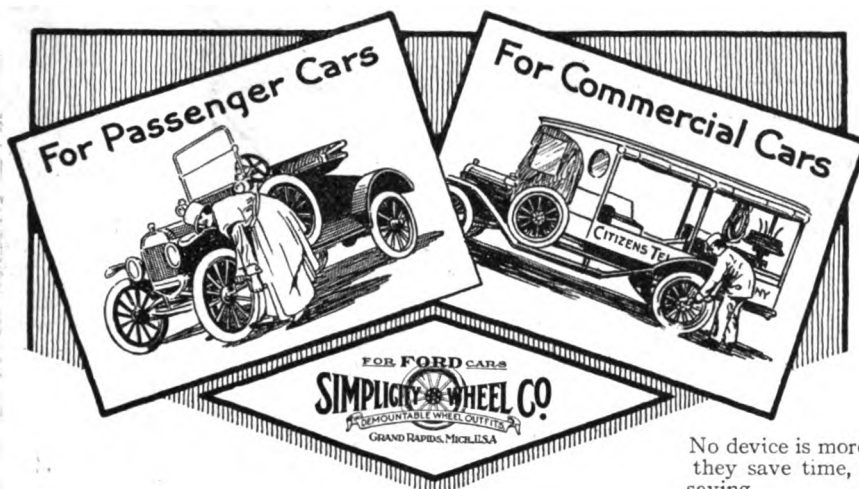
Cylinder Reboring is expert work, which builds up a trade of satisfied customers, and in many cases the only remedy for lost power.

THE IMPROVED UNIVERSAL CYLINDER REBORING TOOL is simple to operate and bores perfectly round and smooth. Adjustable from 2 1/2" to 5 1/16".

You can make liberal profits if you are equipped for this work.

For Sale by Your Jobber Write for Catalog No. 10

THE UNIVERSAL TOOL CO., INC.
DETROIT, MICH. U. S. A.



SIMPLICITY DEMOUNTABLE WHEELS

Will Put Speed in
Your 1918 Sales

No device is more in demand today than demountable wheels they save time, tires, work and money, and this is a day of saving.

The **SIMPLICITY DEMOUNTABLE WHEEL FOR FORDS** is the most practical device for its purpose ever constructed. They consist of the regulation Ford wheel with specially designed and patented retainer rings, special bolts, nuts, wrench and wheel carrier.

Entire fleets of Ford commercial cars are equipped with **SIMPLICITY** outfits. Commercial car owners realize that a quick change is a big saving to them, as well as allowing them to give uninterrupted service.

Thousands of passenger cars are today carrying the **SIMPLICITY** outfit as regular equipment. A child or woman can make a change with a **SIMPLICITY** in four minutes.

DEALERS—Your Biggest 1918 Opportunity!

There are hundreds of sales in your territory, Mr. Dealer, for **SIMPLICITY** outfits. They mean big profits to you with the least effort. One outfit will sell many others. Get this time and money saving device working for you. Write us at once for free descriptive literature.

SIMPLICITY DEMOUNTABLE WHEEL COMPANY

GRAND RAPIDS, MICHIGAN

Through the winter months, the very thing that makes business run low in other lines makes **profits in battery charging run highest**. Heavy starter service when the engine is cold and excessive use of lights on account of shorter days quickly drain the storage battery and bring

Big Winter Profits in HB Battery Charging

Wise garage owners everywhere with HB equipment are clearing \$30 to \$60 a month extra profit right along and many are making two and three times this much. The HB 500-Watt Battery Charger guarantees **quick charging and large profits**. Recharges 1 to 7 batteries at a time at cost of 12c to 15c per battery. Autoist pays 75c to \$1.50. No special electrical or mechanical knowledge required. City current operates, or belt-driven equipment can be supplied if city current is not available.

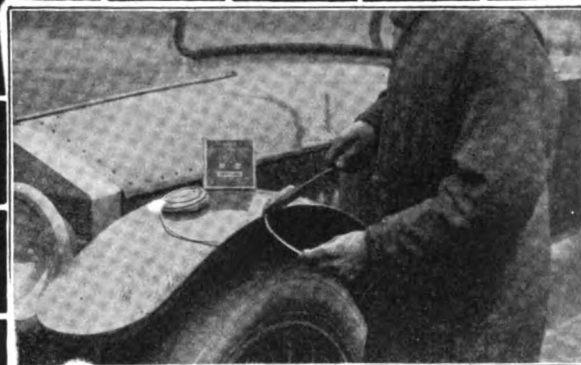
\$15 Puts This Money-Maker In Your Garage

Balance in 8 monthly payments of \$20 each, which earnings should easily pay and give good profit besides. Write for full particulars, or send initial payment of \$15 with this **ad for special ten-day trial of this equipment**. You take **absolutely no risk**. Satisfaction guaranteed or your **money back**. The quicker you get your charger, the sooner your profits begin. Write or wire TODAY.

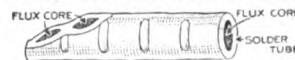
Hobart Brothers Co.
Box G1 Troy, Ohio



**A Big Money Maker
All the Year Round**



Any repair job is easy
when done with **KESTER**
CRYSTAL-CORE WIRE SOLDER!



With it there's no waste—no fussing or bother—it's ready to use. Use it for soldering battery terminals, gasoline tank and pipe joints, radiator leaks, cracked fenders, spark plugs terminals, electrical connections—or general garage use.

Sold in one pound coils and on one, five or ten pound spools.

ORDER FROM YOUR JOBBER

CHICAGO SOLDER CO.
CHICAGO, ILL.
U.S.A.



Motorists Will Be Glad to Know About This—

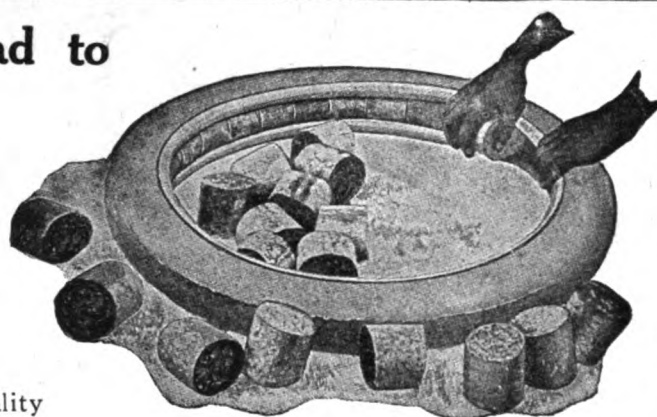
The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air.**

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



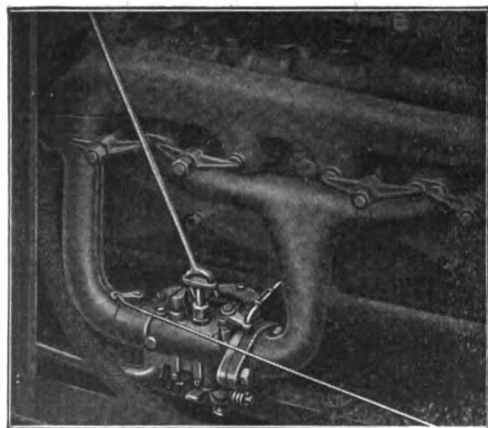
National Rubber Filler Co.



MIDLOTHIAN TEXAS.



Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.



JOINTLESS

PATENTS PENDING

The PISTON RING preferred by men who know

Car owners who know the difference among piston rings invariably specify the JOINTLESS.

When you fit customers' cars with JOINTLESS rings you can be assured that they will give **lasting satisfaction**. They are made for that purpose.

Being composed of two members of the same size, strength and form makes it the easiest ring to handle. Any two parts of the same diameter may be assembled and form a complete ring. Should one part be broken, it is only necessary to re-order a half ring instead of a whole one.

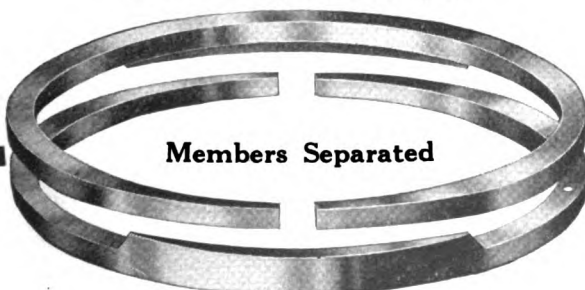
Uniform radial expansion prevents the wearing of the cylinder out of round, and the lack of an opening from one side to the other at any point in its circumference prevents oil pumping and other leakage which causes carbon trouble, loss of power and waste of fuel.

Retail Price Only \$1.00

When the JOINTLESS can be obtained for one dollar each, you cannot afford to experiment with unsound rings. Easy to install, efficient in performance and sensibly priced, it insures a service and a saving to the dealer and the user which cannot be had with other types of piston rings. When ordering, specify JOINTLESS and accept no substitute. If your jobber does not carry the JOINTLESS, send your order direct to us.

DETROIT PISTON RING CO.

Manufacturers
DETROIT, MICHIGAN



Members Separated

YOUR GUIDE FOR 1918 SAVINGS

B BRAND Products are ready and profitable sellers

because they give invariably good service, full value and a good margin of profit to the dealer. Write today for our new catalogue. It will mean a lot to your 1918 business.

B BRAND Ford Special Spark Plugs are rapidly becoming recognized as the best plug made for a Ford. Always fires—soot and oil proof. Hexagon head set high. Specially heat treated. A quick seller and trade builder.

Also other **B BRAND Spark Plugs** for all styles of motors.

B BRAND Endless 4-ply belt for Ford cars. Made of heavy double filled duck belting, heavily stitched and joined by a special method. A belt that will popularize your accessory department and increase your profits. Thousands are in use.

B BRAND Curtain Lights. Constructed of selected celluloid, bound all around with the best leather gimp. Easily attached and presents a handsome appearance. A rapid sell and profitable specialty. Furnished in either oval or square design.

B BRAND Belt Hooks. Easily attachable and yet not so easily detached on the pulley. A hook to ride over small pulleys and which, even if placed on belt slightly crooked, will allow belt to run straight.

Write today for complete B BRAND Catalogue

THE CHAS. H. BUETTNER CO.
1926 W. 8th St. Cincinnati, Ohio

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

FORD OWNERS

That rattle means steering trouble

by investing

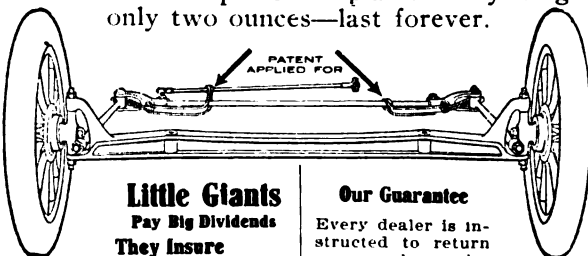
STOP IT!**75c**

in a pair of

LITTLE GIANTS

(SPRINGS)

They will save you money and ward off danger. You can install them in a minute for all you need to do is snap them in place. They weigh only two ounces—last forever.


Little Giants
 Pay Big Dividends
 They Insure

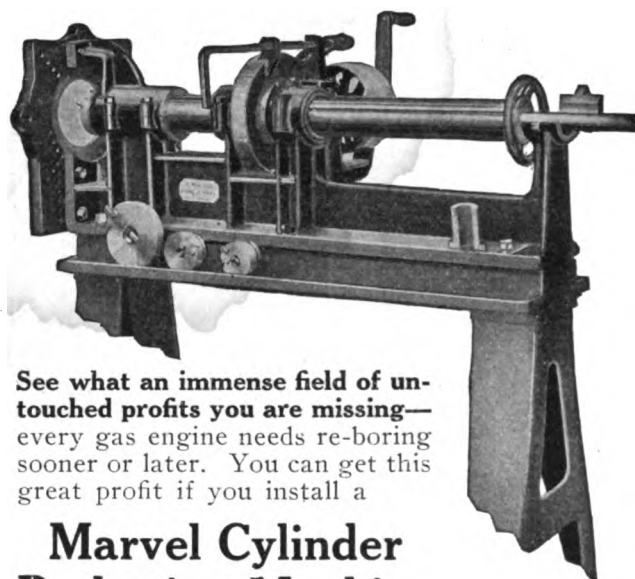
20%	decrease in Tire Wear
30%	" " Skidding
40%	" " Accidents
50%	" " Bushing Buys
75%	" " Nerve Strain
100%	" " Rod Rattle

Our Guarantee

Every dealer is instructed to return your purchase price if you are dissatisfied. The Little Giants do the same work when installed on Dodge, Maxwell and other cars.

Order Through Your Dealer If he does not carry Little Giants in stock he will get them for you. Should there be no dealer available we will fill your order if you remit direct to us.

THE AMERICAN AUTO PRODUCTS CO., Dept. D
 1120 S. Michigan Ave. Chicago, Ill.
 240 S. Broadway Denver, Colo.



See what an immense field of untouched profits you are missing—every gas engine needs re-boring sooner or later. You can get this great profit if you install a

Marvel Cylinder
Re-boring Machine

The only device that will do the work and bring you the profit—no other like it for *speed, accuracy, simplicity of operation* and *general efficiency*.

Will re-bore any block, 2½" to 8" in diameter, perfectly round and without taper, accurate to less than .001 of an inch.

Write for particulars and about the accurate fitting pistons we supply.

MARVEL MACHINERY CO.
 1303 S. Third St., Minneapolis, Minn.

AKME**ELECTRIC BULBS**

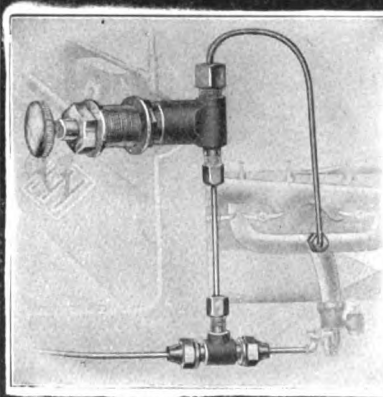
For tail-side Head-dimmer and speedometer lights, 3-4 volts, 6-8 volts.

Buy from factory direct and save money.

Standard package 25 and 100 Bulbs.

Write for big discount.

AKME LIGHTS ARE RIGHT

STANDARD ELECTRIC
LAMP WORKS
411 S. SANGAMON ST., CHICAGO, ILL.
Sell C-W **INSTANT**
GUN
PRIMERS!


Every car owner desires a C-W Primer for instant starting during cold winter days.

In a class
by itself!

The C-W Instant Gun Primer secures immediate results without back fire or leakage.

Three big features:

Shoots a rich spray of gasoline into cylinders, causing immediate ignition; no back fire; no leakage.

Will readily appeal to your winter motoring customers.

this coupon with \$10.50 brings six Primers together with C-W Primer mounted on display counter board—

C-W MFG.
CO.
PERU, IND.

Crum-Wiley Mfg. Co., Dept. H., Peru, Ind.

Attached find \$10.50, for which ship by express six C-W Instant Gun Primers, nickel, and one on display board.

Name

Address

Check Up Your Workmen's Time

and know definitely just what each repair job costs. Keep an indisputable and correctly printed record of the exact time consumed in doing any repair work. Use



THE AUTOMATIC TIME STAMP

More and more service stations are finding that these machines are real money savers. They put your business on the firm foundation of actual costs to you. There isn't any guesswork. They save time, money and annoyance—eliminate losses and save profits.

Sample cost tickets and complete data sent on request.

Also, Makers of the Automatic Time Register, the Duragraph (Elapsed Time Recorder), and Time Recording and Computing Machines for all divisions of time and for all purposes.


THE AUTOMATIC TIME STAMP CO.

Automobile Dept., 161 Congress St. Est. 1880
BOSTON, MASS.

Originators of the art of printing time automatically

I Save Money Every Day

with the **HARTON** LOOSE LEAF **GARAGE PLAN**



GARAGE OWNERS You are losing money every day if you have not installed the HARTON LOOSE LEAF GARAGE SYSTEM. The HARTON SYSTEM is an automatic book-keeper that cannot make mistakes and requires no salary.

The HARTON SYSTEM turns losses into profits. Garage keepers write us telling how accurate and helpful this proven System is.

A Dollar Saved is a Dollar Earned



Carbon Sheet

YOUR NAME PRINTED HERE

This Page is the Customer's Bill the one underneath is your copy

A FEW REASONS WHY

1—When you make an entry a bill and charge are made at the same time. 2—Simplified method for recording and posting all items. 3—Avoids the necessity of posting each item. 4—Requires the minimum amount of labor. 5—Statements ready at end of month for immediate mailing.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

Send for Descriptive Folder and Full Particulars
THOMAS J. HARTON & CO., Inc.
Loose Leaf Specialists 212-X Church St., NEW YORK

We Have a Few Profitable Territories Still Open for Real Live Dealers

A Storage Battery Proposition Without Competition

Something Different

“THE
BATTERY
SYSTEM”

Write Today

Electric Material Co.

1422 Pine Street

St. Louis, Mo.



“QUEEN OF THE HIGHWAY”

YOU HAVE HEARD SO MUCH ABOUT

PAN

WHY NOT SEE US DURING THE AUTO SHOW

CHICAGO
HOTEL LA SALLE
JAN. 26—FEB. 2

MINNEAPOLIS
HOTEL RADISSON
FEB. 2-9

PAN MOTOR COMPANY

SAINT CLOUD, MINNESOTA

Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.



Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

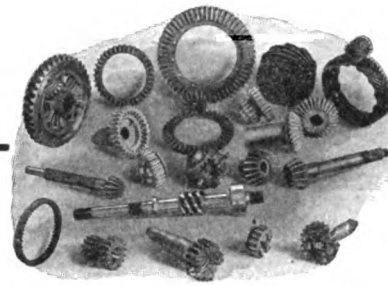
The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely **LOCKS** your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.

DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.



Ganschow Gears

are the standard of quality for the automobile industry. Our quick service has also made the names "GANSCHOW" and "GEARS" synonymous to car owners, garagemen and repairers.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.

William Ganschow Company

1002 W. Washington Blvd., Chicago, Ill.

WILLARD SUPER HEATER

A great saving for the car owner.
Big Profits for You

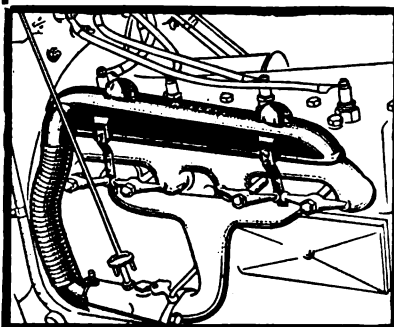
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



**Retail Price,
\$5.00**

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

Garage and Supply Dealers

Put your business on a paying basis by reducing your office expense. Use the **AKKURATE SELF INDEXING LEDGER STATEMENT**. You see a number of accounts of the same letter, at a glance. You cannot lose track of any account after it has once been entered, but you have lost slips from your so-called loose leaf systems.

Read what one dealer writes to us.

Accurate System & Manifold Co., 22 Beekman Street, City.

Gentlemen:—We received your bookkeeping system and the office help are more than pleased with it. It is more than a success.

Yours for further wants,

Parkside Garage Co., C. R. Searle.

Buffalo, N. Y.

AKKURATE SELF INDEXING LEDGER STATEMENT

Prevents errors, improves your collections.

Send for our special offer on your business letter head.

ACCURATE SYSTEM & MANIFOLDING CO., Inc.

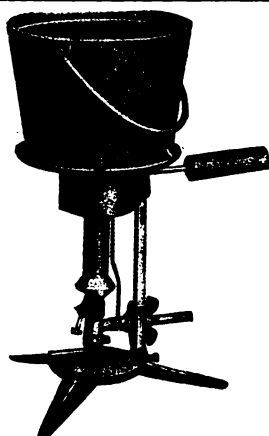
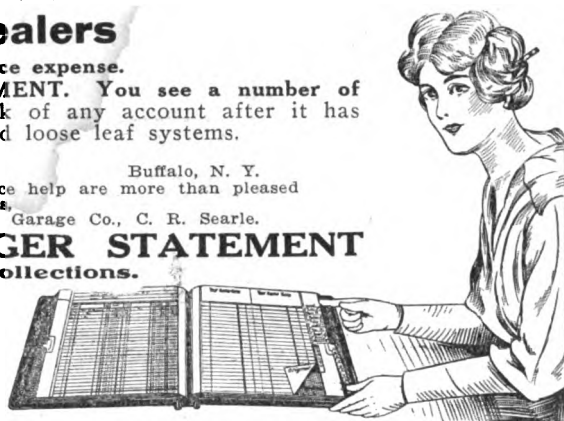
Originators of the

AKKURATE SELF-INDEXING LEDGER STATEMENT

Combined with a monthly garage and supply bill or statement

22 Beekman Street

NEW YORK



This Johnson No. 8 Gas Torch Decreases Repair Cost

Just the thing for soft metal melting or heat-treating purposes. It will help you to increase your repair work because it is quicker, safer, and costs less to operate.

It produces an instant heat of 1400 to 1800 degrees F., for heating metal parts, soldering irons or tools, and for tempering or annealing. The removable shield will hold a melting pot 6 inches in diameter, and will readily melt 20 lbs. of soft metal.

Burner is adjustable to any angle, or it may be removed from its base and used as an efficient hand torch.

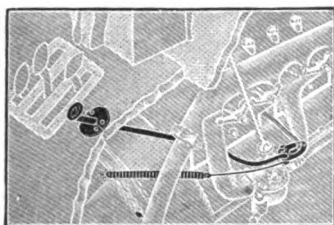
Price complete, with melting pot, \$8.40. Write for complete catalog.

JOHNSON GAS APPLIANCE COMPANY, Cedar Rapids, Iowa

Two "Sure Fire" Sellers for the Trade

EWALD FOOT ACCELERATOR

EWALD 2-Inch All-Steel CUT-OUT

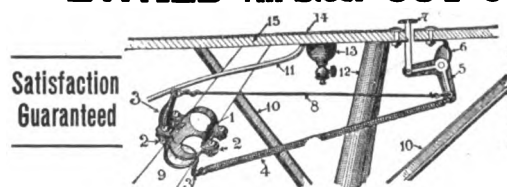


gets the Ford under full speed almost instantly. It does away with the vexatious delays when starting and leaves the driver's hands free to operate the steering wheel, horn or brakes.

It increases the mileage per gallon by not racing the engine and soon pays for itself.

Ford owners everywhere are ready customers.

DEALERS: Write for literature on Ewald specialties and our liberal trade offer.



Satisfaction Guaranteed

40,000 In Daily Use

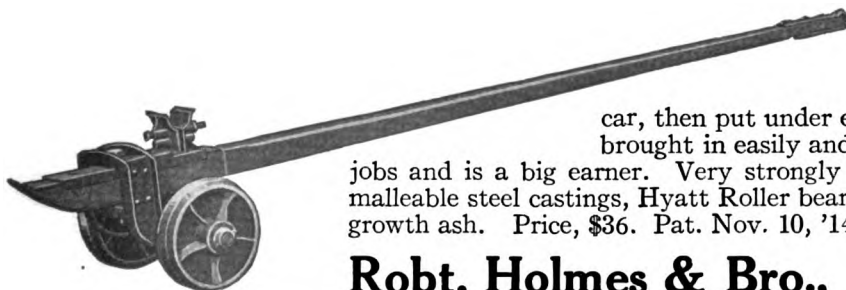
Will make any car talk like a racer.

Just look at our low prices!

2-inch Cut-out for Fords.....\$0.80 List
2-inch Cut-out for Dodge, Studebaker, Hupmobile, Maxwell, Buick and Chevrolet.....\$1.25 List

EWALD NOVELTY WORKS, Oakfield, Wis.

Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$36. Pat. Nov. 10, '14. Discounts to dealers and garages.

Robt. Holmes & Bro., - Danville, Ill.

Accurate Repair Charges



THE CALCULAGRAPH

records and prints the elapsed time on each repair job. This time plus materials used gives you the only correct basis for repair charges.

The CALCULAGRAPH eliminates the errors due to guess work and rule of thumb methods. It prevents disputes with customers, as it enables you to show them that your charges are fair and equitable.

The CALCULAGRAPH will enable you to determine what jobs are profitable and which are not, and to re-adjust your charges accordingly.

It will soon pay for itself in your repair shop.

Send for Booklet W, showing a complete set of forms for a simple Garage Cost System.

CALCULAGRAPH CO.

30 Church St., Dept. 77 NEW YORK CITY, N. Y.



You Live Wires, Look Here—

We have solved the tire changing problem with the

ACME DEMOUNTABLE WHEEL for FORD CARS

It is the best made, most practical demountable wheel on the market today. Better than rims, simply constructed, easily attached and fool proof. The price is right—\$15.00 equipped—and allows a fine profit for the dealer.

An agency in your town is worth having. Write for terms and prices.

ACME DEMOUNTABLE WHEEL CO.

Suite 1200—28 E. Jackson Blvd., Chicago

NOTE—Our ACME WHEEL CARRIER is a winner. Sells for \$2.50. Slightly—Sensible—Secure.



Universal Hose Clamps

Are superior. One clamp adjustable for every purpose.

They cover a world of usefulness. They reduce your stock and increase your turn-over.

Wherever shown, the UNIVERSAL takes the preference.

Let us prove it. Write for full information.

Dept. C.

Universal Industrial Corporation
Hackensack, N. J.

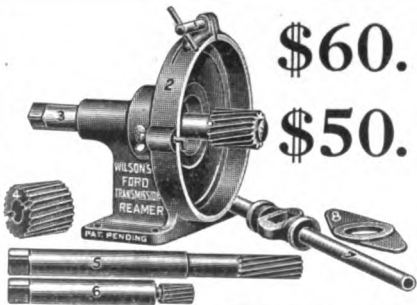
TOZALONE THE ONE MAN TOW BAR

The next time you have a Ford to tow in, send out just one man and the TOZALONE! You don't need a helper with the TOZALONE because it pulls—holds back—and steers—the only towing equipment on the market which brings them in without a man in each car.

Simply send your check for \$8.65—and your TOZALONE will be shipped to you at once. Then you try it for ten days—and unless you are delighted at the end of that time just return it and get your money back at once.

CONSOLIDATED MOTORS COMPANY

958 Chamber of Commerce Bldg., Detroit, Michigan



\$60.

Complete with triple gear attachment (as shown).

\$50.

Less triple gear attachments.

WILSON'S FORD TRANSMISSION BUSHING REAMING MACHINE

The only machine or tool made that will ream bushings in all three drums and triple gears absolutely true to a perfect fit and alignment. 2 minutes labor required to set up and ream one bushing. 25 minutes to completely overhaul a transmission better than you ever did it before. Every job uniform. Saves 75% of LABOR COSTS.

Send for Special Circular of Other Time Saving Tools

K. R. WILSON, 1018 Main Street, BUFFALO, N. Y.



Retail
Price
\$2

Flawless
SELF-CLEANING
SPARK
PLUG
"The Plug with the Ball"

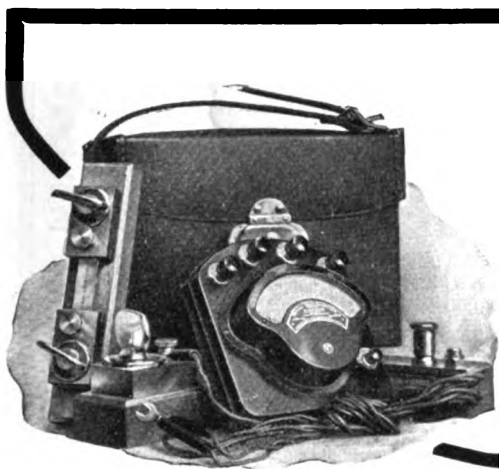
So increases the efficiency of the spark, that any car will give better service with a leaner mixture. Conserve gasoline—and save, with the \$2 Spark Plug with the Ball.

Send for literature and
SPECIAL DEALERS' OFFER

D. & D. Co.

20 E. Jackson Blvd.

Chicago, Ill.



Which Garage Man Gets the Money?

If you can repair and adjust Electrical Equipment, you will get the cream of the garage business and make more money. With the increasing demand for service of this sort, you must equip to handle the business, or lose it to your more enterprising competitor.

Weston

Model 280
**GARAGE
TESTING INSTRUMENT**

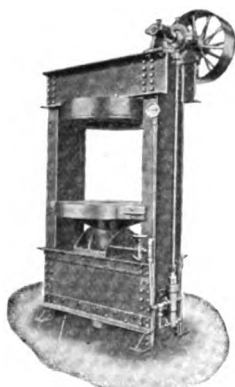
is your one great and urgent necessity, to enable you to locate electrical troubles quickly and apply the proper treatment to remedy them. Its possession will place you a long way ahead of your competitor not so equipped. This instrument is extremely accurate, durable and serviceable. It is the most practical electrical equipment you can install.

The Weston Company is pre-eminent throughout the world in the production of highest grade Electrical Precision Instruments.

WRITE US NOW for our Special Proposition to Garage Owners. It will show you how you can handle electrical apparatus intelligently and profitably.

WESTON ELECTRICAL INSTRUMENT CO., 30 Weston Ave., Newark, N. J.

23 Branch Offices in the Larger Cities



Tire Applying Press

Hydraulic Arbor Presses

work easier
than any
others.

We make
many sizes
for many
purposes.



WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.



SPRINGS IN STOCK FOR ALL CARS

90,000 Springs.

588 Types.

6—FACTORY BRANCHES—6

St. Louis, Mo. 1402 Chestnut St. Minneapolis, Minn. 1024 Hennepin Ave.

Reading, Pa. 538 Franklin St. Ft. Worth, Tex. 708 Commerce St.

Sumter, S. C. 29 Caldwell St. Richmond, Ind. Colonial Bldg.

FACTORY RICHMOND, IND.

JENKINS VULCAN SPRING CO.

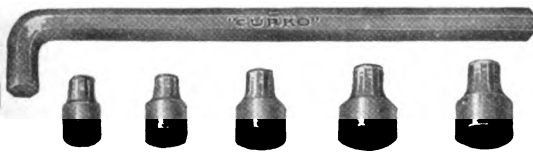
"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar
Steel and are Heat Treated. For

STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price
\$1.00



Graham Roller Bearing Co., Coudersport, Pa.

WELDING PLANTS

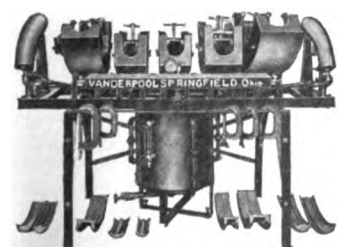
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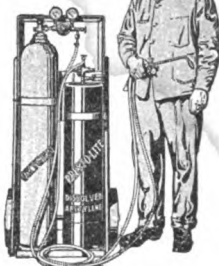
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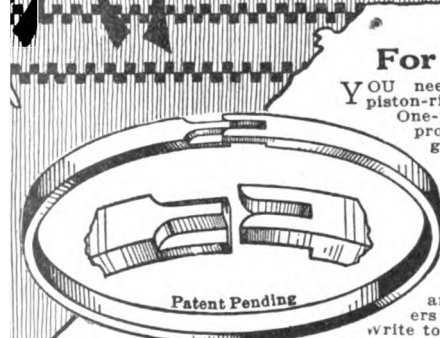
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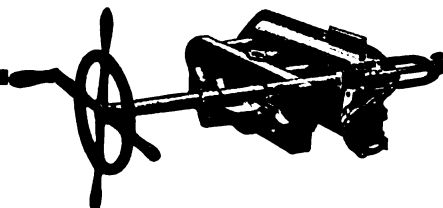


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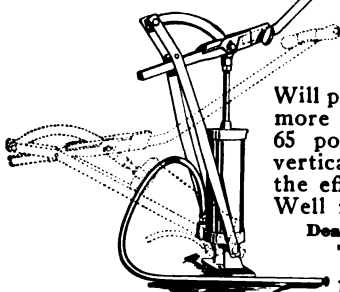
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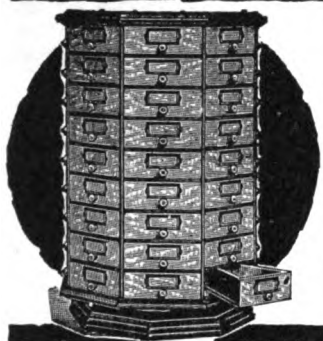
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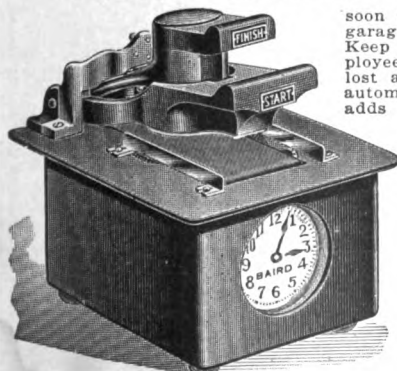
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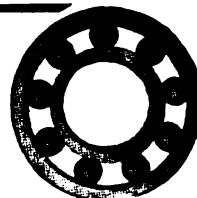
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Calculagraph Co., New York.

TOWING EQUIPMENT

Consolidated Motors Co., 955 Chamber of Commerce, Detroit, Mich.

TRUCK UNITS

Dearborn Motor Truck Co., 1228 So. Campbell Ave., Chicago.
Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.

TRUNKS

Kamlee Co., 440 E. Water St., Milwaukee, Wis.

VALVES

A. Schrader's Son, Inc., 783-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valve).
Romort Mfg. Co., Seattle, Wash.

VULCANIZERS

Vanderpool Vulcanizing Co., Springfield, Ohio.

WATER CIRCULATORS

Crum-Wiley Co., Peru, Ind.

WELDING APPARATUS

Bermo Supply Co., Omaha, Neb.
Eveleth-Lindsay Co., 693 Raymond Ave., Minneapolis.
Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.
Prest-O-Lite Co. (Oxy-Acetylene) 883 Speedway, Indianapolis, Ind.

WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

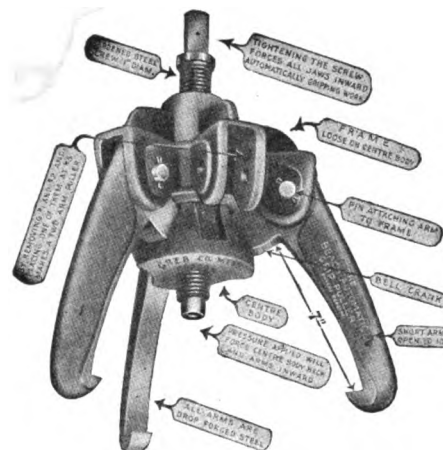
WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		I	
Accurate System & Manifold- ing Co.	53	Imperial Brass Mfg. Co.	—
Acme Demountable Wheel Co.	54	Inland Machine Works.	7
Adams & Elting.	45	Iowa Novelty & Brass Wks.	59
Advance Automobile Accesso- ries Corp.	62	J	
American Auto Products Co.	50	Jenkins Vulcan Spring Co.	55
American Battery Co.	58	Johnson Gas Appliance Co.	53
American Bolt & Screw Case Co.	57	K	
American Machine Products Co.	27	Kamlee Co., The.	59
American Oil Pump & Tank Co., The.	6	Kennedy Car Liner & Bag Co.	59
American Technical Society.	45	Kerosene Burning Carburetor Co.	—
Aske Automatic Voltage Regu- lator Co.	57	Keys Piston Ring Co.	56
Atlas Auto Supply Co.	61	L	
Auto Cape Top Co.	58	Lawrence & Co., L.	59
Auto Engine Works.	58	Lourie Mfg. Co.	55
Auto Parts Co. (St. Louis)	58	M	
Auto Salvage Co.	58	Marvel Carburetor Co.	48
Auto Spring Repair Co.	59	Marvel Machinery Co.	50
Automatic Time Stamp Co., The.	51	Martin Rocking Fifth Wheel Co.	—
Auto Wrecking Co.	58	Master Body Co.	6
Automobile Accessories Co.	58	Metal Products Co.	56
B		Miami Trailer Co.	4
Bailey Non-Stall Differential Corp.	—	Milwaukee Tank Works.	43
Baird Equipment Co.	57	N	
Bearings Service Co.	29	National Cash Register Co.	37
Berno Co., A. J.	55	National Rubber Filler Co.	48
Brunner Mfg. Co.	35	National Wire Wheel Works.	10
Buettner, Chas. H., Co.	49	New York Lubricating Oil Co.	56
Burd High Compression Ring Co.	23	Norma Company of America, The.	9
Butler Mfg. Co.	58	O	
C		Olympian-Motors Co.	59
Calculagraph Co.	54	Osgood Lens & Supply Co.	—
Catelain, Andre G.	59	P	
Chicago Baling Press Co.	57	Pan Motor Co.	51
Chicago Solder Co.	47	Permalife Storage Battery Co.	57
Commonwealth Edison Co.	—	Pondelick Bros.	52
Consolidated Motors Co.	54	Prest-O-Lite Co.	56
Crum-Wiley Mfg. Co.	50	Pruyn Ball Bearing Works.	57
D		R	
D & D Co.	54	Regal Motor Car Co.	21
Dearborn Motor Truck Co.	55	Reliance Co.	52
Defender Auto Lock Co.	3	Romort Mfg. Co.	—
Detroit Auto Radiator Co.	58	.....Inside Back Cover	—
Detroit Piston Ring Co.	49	Ross-Gould.	—
Detroit Weatherproof Body Co.	5	S	
Dunton Co., M. W.	57	Salter Motor Mfg. Co.	59
E		Scaife & Sons Co., Wm. B.	59
Electric Material Co.	51	Schrader's Son, Inc., A.	25
Electrical Testing Co.	58	Security Auto Lock Co.	—
Elgin Motor Car Corp.	32, 33	Simplicity Wheel Co.	47
Eveleth-Lindsay Co.	57	Slocum, Avram & Slocum.	56
Ewald Novelty Works.	53	Smith Motor Truck Corp.	—
F		Standard Electric Lamp Wks.	50
Federal Sign System (Electric) — Flexlume Sign Co. ....Back Cover	—	Standard Oil Co. of Indiana.	39
G		Sterling Engine Co.	58
Ganschow, William.	52	Storm Mfg. Co.	41
Garden City Spring Works.	59	Sunderland Machinery & Sup- ply Co.	58
Globe Mfg. Co.	19	U	
Graham Roller Bearing Co., The.	55	United Engine & Mfg. Co.	—
Gray-Heath Co.	56	.....Inside Front Cover	—
Greb Co., The.	61	Universal Industrial Corp.	54
Greer College of Motoring.	59	Universal Tool Co.	46
Guarantee Liquid Measure Co., .....Front Cover	—	V	
H		Vanderpool Vulcanizing Co.	55
Haney & Co., J. H.	43	Visible Gasoline Dispenser Co.	8
Harton & Co., Inc., Thos. J.	51	W	
Harvey Spring & Forging Co.	31	Webber & Co., P. H.	17
Heinz, J. O., Co.	46	Weston Electrical Instrument Co.	55
Heiser Special Tool Co.	56	Wiggins, J. B., Co.	46
H. L. Lacing Co.	59	Willard Co., The.	52
H. M. Manufacturing Co.	—	Wilson, K. R.	54
Hobart Bros.	47	I	
Holmes & Bros., Inc., Robert.	53	Imperial Brass Mfg. Co.	—
Howell Co., The W. H.	56	Inland Machine Works.	7
Hughes & Co., D. C.	41	Iowa Novelty & Brass Wks.	59

GREB PRODUCTS

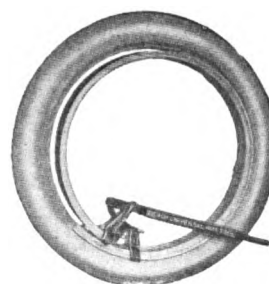


Open view showing extra jaw sockets for a two jaw puller.

Beach Automatic Grip Puller

LIST PRICE \$20.00

Liberal Discounts to Jobbers and Garages



View showing contraction.

The Beach Universal Rim Tool spreads the rim one-quarter of an inch if necessary, raises one end 2" and carries it over and by the other 4", thereby contracting the rim. The spring of the rim holds and locks it in the contracted position. No changing of clamps.

Beach Universal Rim Tool

PRICE \$7.50

Liberal Discounts to Jobbers and Dealers

Look for them at the New York and Chicago Automobile Shows. Ask your Jobber or write us direct for prices and information.

DISTRIBUTORS

Wales-Adamson Co., 1402 So. Michigan Ave., Chicago, Ill.
C. L. S. Holmes, 702 Boston Block, Minneapolis, Minn.
The Knight Company, 922 David Whitney Bldg., Detroit, Mich.

THE GREB COMPANY
194 State Street — — BOSTON, MASS.

FREE!

A Display
That Will
Increase
Your
Sales!



Accept this large, beautiful, display sign for the dressing of your window. It is the size that has been proved right—27x42 inches. Distinctive and compelling—lithographed in colors.

Will Bring You Big Demand and Generous Profit

Tire-Doh has nearly 1,000,000 users now—grateful and satisfied for the most economical repair for inner tube punctures and blowouts. Many thousands of them are getting thousands of miles more from tires by Tire-Doh-izing casing cuts and blisters. Country-wide advertising, local advertising and generous individual advertising helps will bring you a big volume of business—your profit is 50%.

Complete Tire-Doh outfits sell at \$1.00 and 50c. Write for the special proposition we have open for you and samples of the help we offer.

ATLAS AUTO SUPPLY CO., 680 W. Austin Ave., Chicago

the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers

Stops Ford chatter grab and slip

That noisy chat-t-er-ing when you work the Ford brake is more than a nuisance. It means hard, slippery brake linings—waste motion—lost “pull”—car ruining vibration.

ADVANCE CORK INSERT TRANSMISSION LININGS FOR FORDS

stop the chattering because they stop the grab and slip. The buttons of cork never become smooth or hard. Both corks and fabric wear very slowly. One set outwears three sets of ordinary linings. Cork Insert Transmission Linings make the Ford brake **brake**—make the car “pull” better and haul heavier truck loads—get **instant action** in response to a mere touch to the pedals—give “pep” in the get-away, put positive action in the brake.

Stops Fan Belt Slipping



The ordinary Ford fan belt soon gets “slippery as an eel.” That means as high as 25% to 50% lost power. The fan naturally doesn’t fan as it should—the motor overheats because it isn’t properly fanned—and there’s trouble to pay. **Most** motor trouble, in fact, results from overheating.

Cork Insert Products
will be exhibited at the
Chicago Show

Cork Insert Fan Belt stops slipping throughout its long service. The buttons of cork hold their ability to grip—not affected by water, oil, grease or dirt. Better service, longer wear, greater economy.

DEALERS Order Cork Inserts from your jobber. Cork Inserts are one of the biggest successes of the year in the trade. Every Ford has to have transmission linings and fan belts. Cork Inserts do the work better—last longer—save money. They are strongly advertised. They certainly do *move* and keep profits rolling in.

**Advance Automobile
Accessories Corp.**

Dept. A7-1, 58 E. Randolph St.
Chicago, Illinois

PRICES

Cork Insert Transmission Linings
\$3 per set of 3

Cork Insert Fan Belts, \$1 for 1917
Fords, 85c for preceding models

Dealer's Coupon

Check and
mail today

ADVANCE AUTOMOBILE ACCESSORIES CORP.,
Dept. A7-1 58 E. Randolph St., Chicago.

- ☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.
(Regular dealer discounts to apply)

Name

City State

Jobber's Name

ROMORT SPECIALTIES

are essential equipment for garages and service stations

The growth and future of your business are based to a large extent on the kind of service you give your patrons. ROMORT Specialties will enable you to give the prompt, efficient service that brings customers back. They are known throughout motordom as invaluable friends of the garage and service man. ROMORT products are backed by this liberal guarantee:

"All goods manufactured by the ROMORT Manufacturing Co. must be perfect in material and workmanship. Any article found defective will be repaired or replaced at their Oakfield office, free of all cost, except transportation charges, which must be prepaid."



Style A
List Price \$3.00

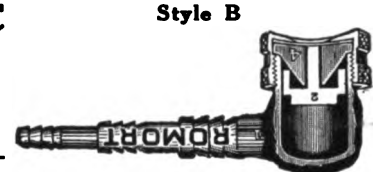
Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to hard, rough usage. Air is released only when the Valve is pressed onto the tire. Equipped with the famous Romort Pump Connection Rubber.

ROMORT AUTOMATIC AIR VALVES

For Service Stations

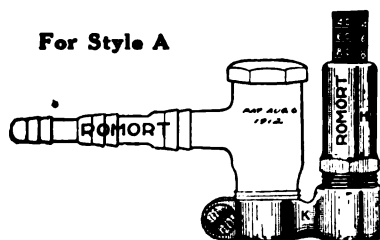
The Style A Valve is a guaranteed device that has no equal for free air stations.

The Style B Automatic Air Valve is recommended to free air stations requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. We strongly recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.



Style B

List Price \$1.00



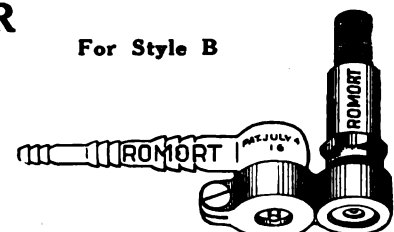
For Style A

ROMORT TIRE TESTER ATTACHMENT

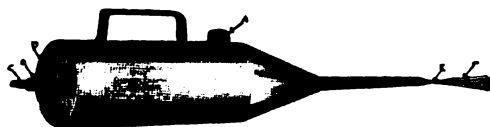
A Garage Necessity---List Price \$1.50

A device for attaching your gauge to either Style A or Style B Romort Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflater combined in one, and the old trouble of losing gauge is forever over. We sell only the holder attachment. Every garage with free air should be equipped with the Romort Tire Tester Attachment.

Caution—When ordering, state whether for Style A or Style B Valve



For Style B



Price \$3.50

ROMORT Engine Cleaner

This device has no equal for cleaning the dirt and grease from automobile engines. A child can operate it, yet it does its work with a thoroughness that will satisfy the most exacting. Holds two quarts of fluid—common coal oil is best. With the long spout the operator reaches every nook and corner of the machinery—almost impossible with the old method of rags and waste.

We also manufacture straight and angle pump connections, tank connections and rubber washers.

All jobbers carry ROMORT Specialties.

WRITE FOR LITERATURE.

MANUFACTURERS
ROMORT MANUFACTURING COMPANY

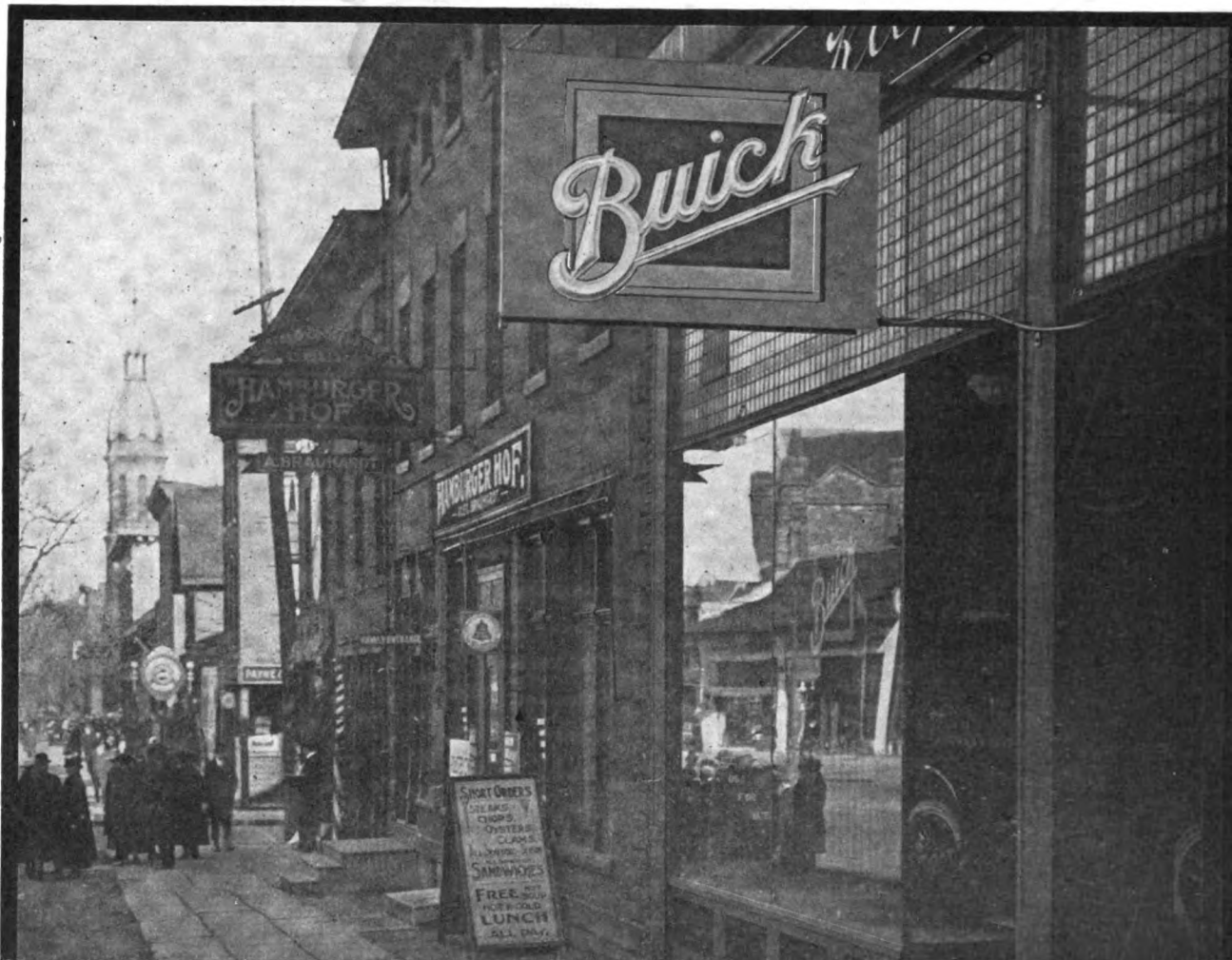
OAKFIELD

WISCONSIN

SALES DEPARTMENT
THE ZINKE COMPANY

1323 South Michigan Ave.

CHICAGO, U. S. A.



Yes, They Know the Car, But Do They Know Who Sells It?

Name ten cars and ask the average man who sells them in your town—he won't be able to locate five dealers.

Take the same ten cars and ask him to mention something distinctive about their advertising—a slogan or design, and he will name it in at least nine cases.

Try it for yourself—we have.

It's because the car is well advertised, but the dealers' location is not advertised.

Mr. Prospective Buyer knows the car you handle is good, but he doesn't know where to find it unless you have some way of telling him.

When he thinks of the car, make him think of your location—that's the way to cash in on the manufacturers' big advertising campaign.

Flexlume signs are tying national advertising right to the dealer's door. They are helping the garage man to get more business. They are bringing accessories to public notice.

Raised white characters on a dark background, each letter a solid outline, no lamps exposed, a distinctiveness of design—these are what make Flexlumes different from other signs.

They are strong, attention-pulling day signs as well as electric night signs—those raised white letters cannot be missed.

A Flexlume will tell your story to the whole town. There won't be any doubt about where the car you handle can be bought.

Let us send you a sketch showing how that sign will look. Just fill out this coupon.

THE FLEXLUME SIGN CO.

Potomac Avenue and Niagara Street
BUFFALO, N. Y.

Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.
Pacific Coast Distributors: Electric Products Corporation, 941 West 16th St., Los Angeles, Cal.

We will accept Liberty Bonds in payment for FLEXLUME SIGNS on a basis of 105

FLEXLUME SIGN CO., Buffalo, N. Y.

Please send me free sketch and information in regard to Flexlume Signs.

Signs should read, Illuminated: ☐ _____

Wordings not illuminated: ☐ _____

To read one or two sides? ☐ _____

Vertical or horizontal? ☐ _____

NAME

ADDRESS

A. G. & A. D.

AMERICAN GARAGE & AUTO DEALER

Volume 9
Number 2

CHICAGO

FEBRUARY, 1918

\$1.00 Per
Year



MIAMI TRAILERS



For War Time Economy

The MIAMI TRAILER solves this problem. Every one in use saves the cost of a truck and the expense of a driver.

It actually cuts transportation costs in half.

Made in twelve styles—one for every purpose.

The MIAMI TRAILER is built to carry heavy loads at automobile speed. Substantially made throughout.

Now is Harvest Time for the Trailer Dealer

Of all war time opportunities none offers a greater field of profit to the automobile trade at the present time than the trailer.

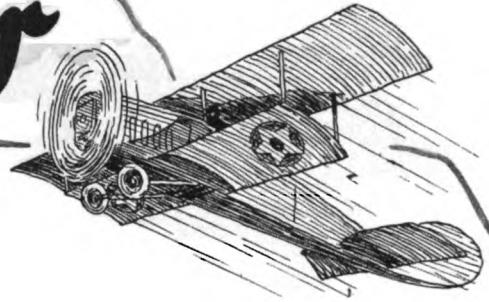
The problem of hauling costs is a serious one to every business man, today. The cost of labor, motor trucks, equipment, etc., is still advancing.

DEALERS! Every merchant, contractor, manufacturer, telephone company, farmer, and many others are live prospects for MIAMI TRAILERS. There is a big, profitable trailer business waiting for you. We will show you how to sell these prospects and make large profits. Write today.

THE MIAMI TRAILER COMPANY
TROY Miami County OHIO

Miami

Miller Carburetor



The market is there for you, Mr. Dealer

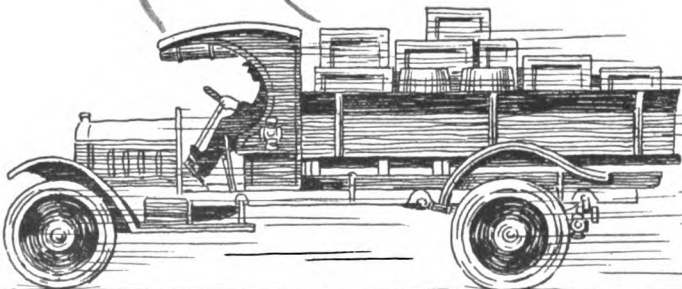
The reputation of the Miller Carburetor is now firmly established. The economy as well as the power and speed that it affords are well known to the motoring public. It has demonstrated its superiority under every condition—on pleasure cars, trucks, tractors, aeroplanes and on the speedway. Those of your customers who want more power and speed can get it with the MILLER, as has been amply demonstrated by its performances on the race courses.

The economy of the MILLER CARBURETOR will appeal strongly to all classes of automobile users. It thoroughly vaporizes every particle of gasoline—even the low grade sold at the present time. It gives **more power and speed on less gasoline.** Positive automatic action and unequalled simplicity are the reasons. No adjustment required.

DEALERS—There is a big and growing market in your district for the MILLER CARBURETOR. Write today for literature and our liberal offer to the trade.

Ford Dealers: We make the Miller Ford Special. Order one today.

MILLER CARBURETOR DISTRIBUTORS, Inc.
2357 Indiana Avenue CHICAGO, ILL.
256 Broadway, New York



Demonstrating the "Stand-Up- Ability" of the **DETROIT** DETACHABLE WEATHERPROOF **TOP**

Los Angeles, Dec. 31—Arrived here this evening. Top like new. Its "Stand-up-ability" is wonderful. Templeton.



J. V. Templeton, of the Sales Department of the Detroit Weatherproof Body Co., starting on his 3,000 mile cross-continent journey in light car equipped with a Detroit Weatherproof All-Season Top. Templeton is seen leaning out of the car, shaking hands with the mayor of Pontiac. The Company's Executive Building is in the background.

This wire was received by the Detroit Weatherproof Body Company from J. V. Templeton, two months after he had started on the first winter automobile tour in a regularly equipped motor car between Pontiac, or any point as far east, and the Pacific coast.

Templetons Lived In Car

During the 3,000 mile trip the Detroit Weatherproof Top with which Templeton's light car was equipped was subjected to every conceivable test of the elements and hard usage. The Templeton's—Mrs. Templeton made the trip, too—practically lived in the car, which was equipped with a special cook stove and folding cots.

A 3000 Mile Test and Triumph

Over roads through which it was a crime to drive any car; across

mountains; through the desert; in rain, snow, sleet and under the blazing sun of the American Sahara, Templeton jammed the car through—and at the end of 3,000 miles of this kind of going the sturdy Detroit Weatherproof Top was "like new!"

Templeton calls it "stand-up-ability"—"wonderful stand-up-ability." But the durability and "stand-up-ability" of the Detroit Weatherproof Top isn't so wonderful to anyone who has visited the great plant in which this top is made and watched it through all the different operations of manufacture.

All D-W Tops Are Good

The best of materials, put together with the best of workmanship, and

subjected to rigid tests in every department, under the searching eyes of inspectors, combine to make each Detroit Weatherproof Top the equal of the one under which the Templetons made the first winter tour between the east and the Pacific coast.

The extreme care used in the making of each Detroit Weatherproof All-Season Top is one of the main reasons why this top leads its field in sales. And it leads by a distance that leaves no doubt as to its superior popularity.

Dealers

For information about our sales proposition, write today, giving your name and address.

For the Present We Manufacture Tops for the Following Cars Only

Ford Touring—\$87.50; Overland Model 83 5-Passenger—\$115.00; Chalmers 6-30 5-Passenger (including rain vision visor to be fitted to standard windshield) \$97.50; Chandler 1917, 1918 (including 3-piece built-in windshield) \$185.00; Buick D45 Light 6—\$140.00; Hudson Super Six Touring (including 3-piece built-in windshield) \$190.00; Chevrolet Model Four-ninety 16-17-18—\$110.00; Maxwell Roadster—\$130.00; Maxwell Touring—\$145.00.

Detroit Weatherproof Body Co.

704 Saginaw Street

Pontiac, Michigan



Are Your Customers Boosters?

Imagine how your business would increase if your customers boosted your gasoline and oil. American equipment, honest measure, quick service, clean gasoline with "pep", lubricating oil—smooth and free from dirt—are certain to secure the approbation of your customers and cause them to "boost."

THE AMERICAN Gasoline and Lubricating Oil Outfits

are designed to satisfy your needs.

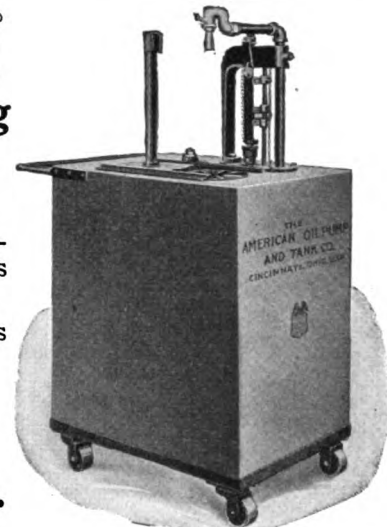
American Curb Pump (Cut 101) is double-acting and discharges gasoline in a continuous stream at the rate of 14 gallons per minute.

American Portable Lubricating Outfit is indispensable for delivering oil at the curb.

Write for bulletins giving complete information, prices, etc.

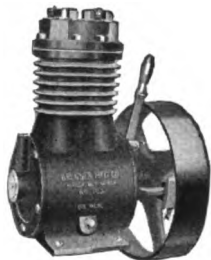
SALESMEN WANTED—Good Territory Open

The American Oil Pump & Tank Co.
CINCINNATI, OHIO



Cut No. 23

BRUNNER



The Brunner Garage Air Compressor has been consistently demonstrating its sterling worth in the garage ever since the garage business has been a business.

BE FAIR WITH YOURSELF, MR. GARAGEMAN—

Don't go off half-cocked when you buy your new air compressor. Give the selection of your new air compressor the careful attention it deserves. It will pay you to devote some time to this matter.



YOUR SUCCESS DEPENDS ON THE SERVICE YOU RENDER—

and your compressed air service is just as important as any part of your service. Possibly more so. Ask your neighboring garageman if he has a piece of equipment in his garage that has proven more satisfactory than his Brunner Air Compressor.



INVESTIGATE THE BRUNNER AIR COMPRESSOR

We will be glad to send you our new No. 15 Catalog and the name of the Brunner Jobber covering your territory and our engineers will be glad to assist you in solving your compressed air problems whether or not you contemplate the purchase of Brunner Equipment.

"Tell your compressed air troubles to Brunner"

BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, NEW YORK

Cincinnati Branch:
CINCINNATI, OHIO



SPECIAL NOTICE TO DEALERS

The most popular type of automobile on the market today, is the light-weight, moderate-priced car.

That's proven beyond contention by the enormous volume of sales last year of that Model, checked accurately through license registration statistics, in every nook and corner of the United States.

A car with ELEVEN YEARS OF UNBROKEN AUTOMOBILE MANUFACTURING SUCCESS BACK OF IT.

But, let us send you a copy of the latest HI-POWER FOUR catalog, with detailed specifications and views of this wonderful, rapid-selling car.

And, if you are in open territory, we have AN EXCEPTIONAL SALES AGREEMENT WE WANT TO SUBMIT TO YOU—one that carries a minimum of agency obligations with a large—extra large—discount.

With the REGAL HI-POWER FOUR and the

REGAL Hi-Power Four

ITS POPULARITY HAS COME TO STAY.

And, it's a big money-maker for the dealers who are handling a good car in that class.

That's why we want to talk to you about the best car in the light-weight, moderate-priced division—the REGAL HI-POWER FOUR.

A CAR LISTED AT ONLY \$795.00

A car that—GAINS BY COMPARISON—in any company.

A handsome, snappy, stylish car with pleasing, graceful lines and attractive finish.

A dependable car, famous for its reliability and service-giving qualities under all conditions.

A power-plus car, with an excess of driving energy for every emergency. Its own REGAL factory built engine is an absolute guarantee of power responsibility.

A strong, staunch, sturdy car—a high-quality car, constructed on honor from radiator cap to tail light for long, satisfactory, efficient service.

A car you will be proud to represent—a roomy, easy-riding, luxuriously appointed, up-to-the-hour and completely equipped car.

**REGAL MOTOR CAR COMPANY
DETROIT, MICH.**

specially liberal REGAL SALES AGREEMENT you can ABSOLUTELY DOMINATE the light-weight, medium-priced motor car demand in your territory.

Fill out and mail the coupon in to us TODAY, and we will make it easy for you to handle the REGAL HI-POWER FOUR.

V. S. Hibbard

General Sales Manager.

USE THIS COUPON

**Regal Motor Car Company,
Detroit, Mich.**

Am in position to consider your sales agreement on the REGAL HI-POWER FOUR. Let me have full details.

Name

Address



With the GEYSER VISIBLE GASOLINE DISPENSER you can serve two cars in the time now taken to serve one.

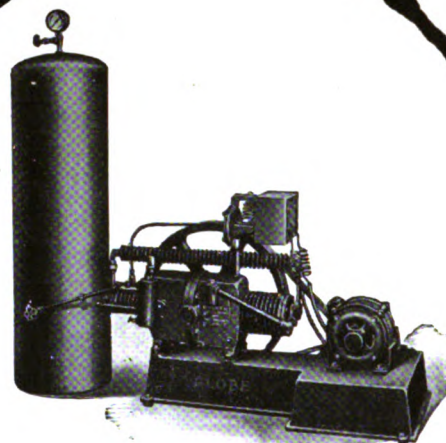
Prompt service and honest measure are demanded by the motoring public. A GEYSER pump in front of your place is a visible guarantee of both. It is your best advertisement and trade winner.

Price \$125.00 F. O. B. Pittsburgh, Pa.

Write today for literature.

THE VISIBLE DISPENSER CO.
422 FIRST AVE. PITTSBURGH, PA.

GLOBE
QUALITY
means
CLEAN AIR SERVICE



The installation of air equipment does not mean simply air compressors. You must protect yours and your customers' interests by supplying "clean air" free from oil.

GLOBE AIR COMPRESSORS are so constructed that it is impossible for the slightest bit of oil to reach the tire.

GLOBE TWO STAGE AIR COMPRESSORS represent the most economical service for garagemen.

GLOBE AIR COMPRESSORS give constant and efficient service. They last longer and are, therefore, cheaper.

The GLOBE UNLOADER is an exclusive feature that permits the starting of compressor without load. This device avoids the danger of burning your motor or the throwing or burning of belts. It also automatically drains the oil tap every time the compressor is stopped.

ALL TYPES OF AIR COMPRESSORS

Write us your air compressor requirements and let us recommend an economical and suitable outfit for your purpose.

Write us today for free illustrated literature.

GLOBE MANUFACTURING CO.
BATTLE CREEK MICHIGAN

AMERICAN GARAGE & AUTO DEALER

Published Monthly

Applicant for Membership in the Audit Bureau of Circulations

TABLE OF CONTENTS

EDITORIAL	Page
Opportunities for Sales	24
Will Overcomes Weather	24
Co-operative Advertising	24
War Highway Needs	24
Look Into the Truck Business	24
GENERAL	
Help Win the War	9
What Automobile Means to the Farmer	10
Car Dealers Must Enlarge Lines	11
Ford Accessories Show Again in Fall	11
Makers War Truck Board to Help in Freight Tie-up	12
Toledo Show Decorations Surpass Former Efforts	12
Otis C. Friend Returns to Big Parts Concern	12
Pan Tank Tread Tractor Designed by a Veteran	12
Trading Service for Profits	12
Road Officials Ask Support to Build Military Highways	14
Dealer Wants Highways Kept Cleared in Winter	14
Chicago's Second Used Car Show	14
Webster Urges Caution Hiring New Employees	14
Freight Direct to Consignee Planned by Philadelphia	15
Warner Sees Big Field for Trailer Industry	15
Maxwell Sales Director Announces New Tractor	16
Ohio Trade Association Has Organization Plan	17
Suitable Garage Building Should Be Practicable	18
Standard Cost System Is Needed by Truck Owners	19
New Liberty Truck Axle Arouses Great Interest	19
Fulton Truck Bettered, But Appears Unchanged	20
Make the Bookkeeping a Business Barometer	21
Associations	21
Milwaukee Dealers Have Successful Truck Show	22
Officials of Elgin Firm Predict Shortage of Cars	22
Success of Chicago Show Exceeds All Predictions	23
Valve Maker Wires Plan to Fuel Director Garfield	23
Fairness Brings Success for Milwaukee Dealer	23
Sales Reach Million Mark for Twin City Exhibitors	25
Braco Rectifier Praised by Electrical Experts	25
Keep Track of Tire Buyers Through Dated Card System	26
Changes in Goodyear Personnel	26
Yes, Why Not Co-operate?	27
Some Good Merchandising Hints	29
In the Service of Our Country	29
Simplicity Wheel Company Has Larger Plant Space	31
Anti-Knocking Pledge	31
Garagemen Help the Farmer Farm	32
Nash Quad Is Distinctive	34
Anti-Fake Part Campaign	35
Among the Manufacturers and Executives	42
Low Speed Record in High Gear	44
Tractor to Be Feature at Indianapolis Show	46
Endurance (Walt Mason)	46
DEPARTMENTS	
How to Make the Shop Pay	28
Welding, Cutting and Brazing	30-31
Mechanical and Engineering Problems	33
A. A. G. O. and Its Activities	36
Accessories and Garage Equipment	37-38-40
Motor and Rubber Stock Quotations	44
Calendar of Events	46
Buyers' Reference	60
Index to Advertisers	61

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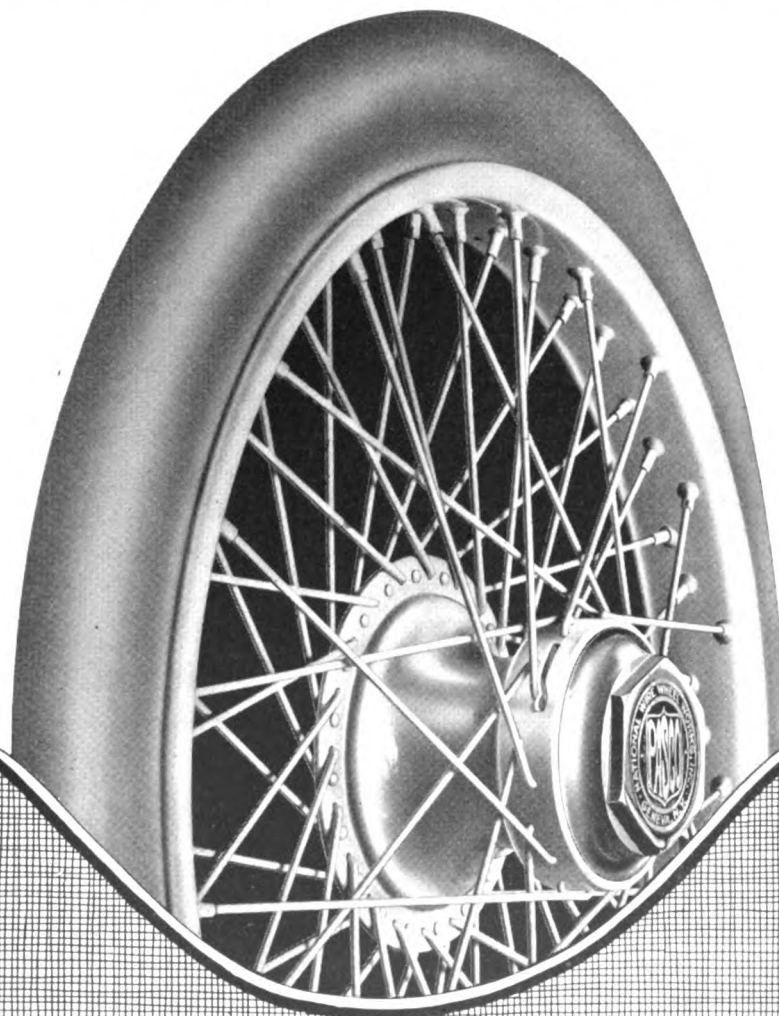
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AMERICAN GARAGE & AUTO DEALER

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HELP WIN THE WAR

Automobile Tradesmen Have Great Opportunity to Serve Their Country and Themselves by Increasing Use of Trucks and Tractors

Every automobile dealer and garageman in the country has a real chance for service in helping the country to win the war. He not only can help win the war in which the country is engaged, but can also do some battling on his own account and win his own individual battle for business success.

Particularly is this true of the automobile tradesmen located in smaller cities and towns. They have a real duty in so far as their relations with farmers, big and little, and owners of truck gardens are concerned. It is a two-fold duty in that a great many of these men should, and perhaps would, be using both tractors and trucks, if the automobile merchant made it his business to bring the virtues of these modern farming implements to the attention of men who could employ them to advantage.

Another way in which a service both to the buyer and the seller could be given would be the selling of trailers. These could be utilized by a good many farmers who could attach them to their passenger cars, and thus do much of their hauling without going to much extra expense.

Most of the "bugs" have been taken out of the tractors, so that no seller of motor vehicles need hesitate to recommend their use. If users have any trouble with them, these difficulties will in almost all cases be engine troubles, and these are the things that the motor car tradesman is best fitted to straighten out. So far as that goes, the spread of the use of cars has been so great in farming districts during the last half dozen years that a good many farmers are pretty good engine mechanics themselves.

That there will be a real need for farm tractors this year can easily be seen when it is realized that practically three-quarters of a million men of agricultural occupations have been drafted into the National Army. The exact figures as given by Washington officials are 782,503

men drafted; 33,528 of these men have been exempted, and claims for exemption are still pending for 1,088.

The work that these men have been doing must be done, if the United States is to feed its own population and help feed the countries with which it is associated in its war against the Prussian war spirit. Not only that, but the men who have been sent into the army must be supplied with food through the efforts of someone else. So it is that more acres must be plowed and planted and cultivated than ever before, and the tractor alone can do this extra work, as the supply of horses and mules is limited.

A good many of the tractors, perhaps most of them, can be operated by boys and youths not yet old enough to be eligible for the draft. So there is every reason why owners of garages, repair shops, accessory stores and service stations, who may not be selling either cars or trucks at present, have a patriotic duty before them to take on agencies for trucks and tractors, even if they do not feel inclined to engage in car selling.

The use of trucks must be greatly increased this year, especially in the farming districts, and in sections around large cities where there are a great many vegetable gardens, because only in that way can the food be economically and rapidly transported from the point of production to the place of consumption.

There has been much discussion lately over the large sums realized by the farmers last year for their products. A little investigation shows, however, that while the value of the farm products last year was higher than ever before, that the quantity produced fell below that of previous years, when as a matter of fact it should have been increased to take care of the normal addition to the population, leaving out of the question altogether the vital necessity of sending great quantities of food abroad.

What the Automobile Means to the Farmer

Saves Time of Men and Horses—Permits Use of More Acreage for Food Production—Essential as Any Modern Farm Machinery

ON THE American farmer rests the responsibility of feeding the Allied armies in Europe and also the civil population of the United States and to a very large extent that of England, France, Italy and Belgium. At the same time the farmer is confronted with a shortage of labor, high wages and greatly increased cost of keeping horses. These conditions make it necessary for him to increase his own efficiency and that of his men and his land.

"To do this he must make more use of time-saving and labor-saving machinery," said Colonel Charles Clifton, president of the National Automobile Chamber of Commerce, in an interview. "The farm tractor for plowing, harrowing and cultivating affords the farmer the most advanced means of greatly increasing his production without hiring more men or using more horses. The automobile and motor truck furnish a means of independent transportation, that is essential to the farmer under present conditions.

"No element of our population is so dependent on individual transportation as the farmer. Usually he is miles from the nearest railroad station and he has a great volume of hauling to do. With a motor truck he can haul larger loads than with a team of horses and can make several trips to market in a day for every one with a team. The horses can be kept on the farm for use in the fields, for hauling wood from the wood lot and for various other work.

"With a motor truck it is entirely practicable to haul a load of farm produce to cities forty to fifty miles away and return home the same day. This is highly important in view of the critical freight congestion on the railroads and the need of relieving them of short-haul work.

Speed in Hauling to Market.

"The superior speed of the motor truck enables the farmer to take advantage of dry weather, when the roads are in good condition, to do the bulk of his hauling. It also permits him to get immediate benefit of market conditions when prices are high.

"Farmers appreciate the many advantages of the passenger automobile. This is shown by the fact that there are two to three times as many motor cars in proportion to population in Iowa, Nebraska and other agricultural states in the Middle West as in New York, New Jersey, Connecticut, Rhode Island, Massachusetts and other industrial states in the East. Farmers are estimated to own nearly half the automobiles in the United States and are the largest buyers at the present time.

"The largest increase in registrations during the first half of 1917 occurred in agricultural states, as follows: Arkansas, 64 per cent; Louisiana, 51; Iowa, 41; Oklahoma, 37; New Mexico, 36; and Oregon, 35. In the manufacturing states the increases were: New York, 24 per cent; Connecticut, 13; Rhode Island, 21; Delaware, 20; Illinois, 13, and Michigan, 18.

"The farmer uses his car as a utility vehicle almost entirely. He drives into town and back in an hour where the trip would take half a day with a horse and buggy. He fills the tonneau with cases of eggs, a tub of butter, cans of milk, sacks of potatoes or even a calf, sheep, or crate of chickens, and brings back rolls of wire fencing, roofing, paper, tools or anything else needed on the farm. If some part of a mowing machine, reaper, cultivator or other farm machine breaks, a quick run to town in the car will bring the replacement part in an hour or two so that the time lost by the men and machine is reduced by several hours.

Children Can Attend School.

"The automobile makes it possible for the farmer to keep in close touch with his neighbors and with the outside world. He and his family and farm hands can attend church, social gatherings, entertainments, political meetings, lectures on improved agricultural methods, good roads meetings, etc., in the evenings and on Sundays and return home at a reasonable hour. Meanwhile, the horses get necessary rest in the stable. Thus all are refreshed and fit for the next day's work. The younger children can be driven to and from the graded schools that are replacing the old one-room district schools and regularity of attendance greatly increased.

"This facility of getting about easily and quickly relieves the monotony of farm life, makes the boys and girls and 'help' more contented and tends to retard the movement from the farm to the city.

"Every passenger automobile used means that at least one horse can be dispensed with," concluded the head of the automobile manufacturers' association. "Each horse requires five acres of land for his support. By using the car, the farmer can devote five acres of good land to raising wheat, potatoes or other staples for human consumption or for raising beef or mutton. A motor truck takes the place of at least one team, and on a large farm requiring a great deal of hauling, will do the work of five or six horses. This will release from ten to thirty acres, sufficient for the support of three to ten human beings. At present high prices of farm products the farmer loses money on every horse he keeps."

Eliminates Pit Work.

A. P. Sallander, Universal Service Station, Portland, Oregon, has invented an automobile lift that will do away with the necessity of pit-work.

The lift consists of two trusses spaced readily for any make of car but not connected; leaving the space under the car entirely free. The trusses look like childhood "teeters." One end of each is on the floor, to let the car run up with its own power or to be backed up with a convenient pulley. The car is then balanced, the trusses are swung parallel with the floor and braced and the workman can finish his job in materially less time than in a pit or by the "flat-on-your-back" method.

Car Dealer Must Enlarge Lines to Meet Conditions

With Passenger Vehicle Production Curtailed,
Tradesmen Can Obtain Trucks to Fill
Gaps in Sales Total

By R. M. FOWLER.

MANY automobile dealers today are uncertain as to just what the immediate future holds for them. The lack of definite knowledge of the production of cars, the difficulties in the way of getting prompt shipments by rail, and the possibility of restrictions in the general use of gasoline, all combine to cloud the outlook.

A slackening of the passenger car business is inevitable, because of a reduction both in the manufacture of cars and in the demand for them. The steel of the country is being apportioned. While it is true that the motor car industry takes but a small part of the total output of steel, the scarcity of labor, the great demand for alloy steel, the railroad congestion, and the necessity of pushing, to the greatest possible point, the production of ships and munitions, make it impossible for the motor plants to obtain anywhere near their normal requirements. The first consideration will, and should, be given to the government demands.

Practically all the passenger car factories are now, or shortly will be, making war materials of some sort. The finest machinery in the country is in the motor vehicle plants, much of it developed to meet the needs of the accurate, fast production characteristic of this business. Also, the motor car plants have the skilled workmen needed, drilled in quantity production. These are the logical plants to make the millions of small shells, of airplane parts, of ambulances, of helmets, of shell cases—the thousand and one smaller things needed in the great business of war.

Demand Likely to Be Less.

The demand for cars seems likely to be less this year and throughout the rest of the war, whatever its length. Economy is urged in every way, as a patriotic duty. Coupled with the absence of new models, this means

thousands of users will drive their old cars instead of buying new ones.

The thousands of business and professional men who have entered the service are most all car owners, and a considerable number of their cars as well as those of drafted men, has been thrown on the market. This means another great cut in the number of prospects for new cars.

All this, however, does not mean that the dealer is to be forced out, or that he must curtail his operations, but that he must change his business to meet the altered conditions. 1918 will prove the best year yet for the dealer who sees the opportunity and puts himself in a position to realize on it.

Truck Demand Increasing

The solution lies in the motor truck. The demand for trucks is greater in every line than ever before, and is increasing every day. And new uses are being found for them everywhere, to meet the necessity of equipping, arming and feeding our troops.

Whatever restrictions there may be on the use of passenger cars, either voluntary or forced, there is little likelihood of any on trucks. They are an economy and a necessity. The maximum production is possible only with machinery, and a mechanical means of hauling is as essential as a mechanical means of filling cartridges. The demand for commercial motor vehicles is bound to be greater than ever before.

In addition to this, an enormous field, heretofore practically untouched, is opening up—one that will require thousands of trucks. This is the handling of freight by motor truck.

The railroads have proved wholly inadequate to meet the present abnormal condition. Congestion and lack of equipment and facilities have made

rail shipments extremely uncertain. The only relief must come from the use of the highways for all so-called short hauls. The saving in time and handling is great. A box shipped by rail must be loaded onto a truck, hauled to the freight house, unloaded there, loaded on the freight car, hauled to its destination, and the same amount of handling done at that point. With trucks, it is handled but twice, once at either end of the journey.

Motor truck freight lines are already being established, and hundreds are being projected for installation later in the season. The coming summer will see fleets of motor trucks and huge automobile road trains using the highways in every part of the country, carrying on the intercity commerce with a dispatch and reliability unknown heretofore.

Truly, the supplying of equipment and service to meet the needs of motor hauling offers an unprecedented opportunity to the motor dealer.

Ford Accessories Show Scheduled Again in Fall

Plans are practically completed for the second annual exhibition of Ford accessories at Chicago and the probable dates are announced as September 23 to 28 next. While the first, and very successful show was held in the Coliseum last Fall it has not been definitely settled that this year's affair will be staged at the same place.

H. V. Buelow, the show manager, is expected in Chicago soon after the close of the big local automobile exhibition at Toledo, which he directs. He will start work at once on the preliminary preparations for the Ford fittings display. It has been reported that some of the automobile manufacturers have objected to the Coliseum being used for the Ford accessories show. It is believed, however, that none of the officials of the National Automobile Chamber of Commerce will do anything to prevent the big arena being utilized again.

Never be afraid to ask a man to buy a car or a tire or any accessory or even to have his automobile overhauled. His most terrible answer will be "No." Perhaps he has only been waiting for your suggestion.

Makers War Truck Board To Help in Freight Tie-Up

Committee Appointed for Constant Service at Washington in United Effort to Better Transportation Situation

With a view to aiding the Government in breaking the present nationwide freight congestion, a Motor Truck Committee of the National Automobile Chamber of Commerce has been appointed for constant service in Washington.

This action was taken as a result of the recent convention of motor truck manufacturers held in New York January 8. At this gathering, which voiced the unanimous desire of the nation's motor truck manufacturers to co-operate with entire unselfishness in any government measures, three men closely allied with war activities pointed out the need for such a committee. These men were Christian Gird, Director of Production, Military Truck Division, Quartermaster Corps, U. S. A.; Hugh Chalmers, Automobile Industries Committee, and Roy D. Chapin, Chairman, Highways Transport Committee.

It was explained that the importance of the motor truck was constantly increasing, not only as a war factor but as a great and immediately available means for dealing with the freight congestion.

Graham Is Chairman

The committee, as organized recently, includes George M. Graham, Pierce-Arrow Motor Car Company, chairman; Windsor T. White, president of the White Company; M. L. Pulcher, general manager of the Federal Motor Truck Company; David Ludlum, president of the Autocar Company, and D. C. Fenner, Mack Motor Truck Company.

This committee will work largely in contact with the Highways Transport Committee, of which Roy D. Chapin is chairman, and which has charge of the responsible task of diverting short-haul traffic from railroads to the highways to relieve rail-

road and terminal congestion and restore normal distribution.

It will also be available to all other departments of the Council of National Defense or of the War Department for any service it may be able to render. The committee will give to manufacturers of motor trucks all over the United States such assistance as they may call for.

Through its direct touch with the motor truck industry and with shippers all over the United States, the Motor Truck Committee should be in a position to lend signal aid.

Temporary headquarters have been taken in the Ouray Building, 8th and G Streets, N. W., Washington, D. C.

Toledo Show Decorations Surpass Former Efforts

Decorations of the interior of the Terminal Auditorium for the tenth annual automobile show of the Toledo Auto Shows Company from February 11 to 16 bettered all like efforts in the Ohio city. A mass of red roses and grand laurel has a pure white setting. The walls have been painted white, all the trellises and booth furniture are of like color.

Against this scheme there are more than 10,000 small incandescent electric lights intertwined. From the ceiling are suspended 1,000 daylight electrical globes, throwing a glare of illumination over the entire structure. The National colors and the American Eagle have received the place of honor among the decorative features as well as life size statutes of Columbia and Uncle Sam. This decorative work was done under the general supervision of H. V. Buelow, manager of the show.

This is essentially a farmer's year at the Toledo show. One of the main features is the farm tractor section, where a tractor school is being conducted throughout the week. Another is the motor truck display. These are the most complete shown in any city in the United States this year, the management declares. There are tractors and trucks for the large and the small farmer, among them being those convertible units by which the farmer can trans-

form his passenger car into a tractor or truck in a few minutes.

Otis C. Friend Returns to Big Parts Concern

Otis C. Friend, who was under contract with the United Motors Corporation and was loaned by it to the Mitchell Motors Company to fill its presidency, has returned to the big parts company as vice president. The United Motors business has grown so big and the work in connection with it so voluminous that its president, Alfred P. Sloan, has welcomed the opportunity of once more securing the services of Friend, whose ability and experience will be of great value.

Mr. Friend's recent retirement from the Mitchell presidency marked the completion of the work for the accomplishment of which he was called there and which it was felt no one but he could do. His knowledge of the Mitchell business was unusually thorough, he having grown up through the various departments of manufacture, purchasing and sales, occupying various departmental chairs until he became president. Friend is a young man, one of the number that the automobile industry has brought to the front. Big physically, he is even bigger mentally, has unusual poise and an analytical quality of mind that well fits him for the large work he now undertakes.

Mr. Friend enjoyed a rest in Southern California where coal shortages do not pester and where, in fact, several were recently overcome by heat. He arrived at Chicago for the last few days of the big annual show at the Coliseum and predicted a big business this year for dealers and garagemen who do not neglect the profit possibilities in selling accessories.

Pan Tank Tread Tractor Designed by a Veteran

Great things are predicted for the Pan "tank-tread" tractor manufactured by the Pan Motor Company in its new plant at Saint Cloud, Minn. This friend of the farmer was designed by the Pan concern's tractor designing engineer, L. A. La Fond, who in 1908 and 1909 designed one of the first successful tractors. Before joining the Saint Cloud organization he was connected with the Diamond Tractor Company and the Hi D Tractor Company.

The Pan tractor engine develops 12 horsepower on the drawbar and 24 horsepower on the belt pulley. It has three speeds forward and one reverse. Its weight is approximately 3,500 pounds. The diameter of the traction drive wheels is 37 inches and 12 inches, the traction surface being 888 square inches. Its total over all length is 90 inches and its width 58 inches. The minimum ground clearance is 18 inches. The tractor will turn in 12 feet.

Trading Service for Profits

THE cancellation of orders for motor cars entered before America got into the war has been more than offset by the increased profits made and wages earned since the advent of the war and the influx of new orders directly traceable to this cause. Keep up the fight for more and better business!

* * *

IF the war economies urged by national and community leaders are going to put a crimp in the automobile business this winter—mind you, we don't say that they will—won't the demand for equipment to "slick up" old cars be in large demand? If the motorists are not going to buy limousines and coupes, they are going to do one of two things—buy winter tops or put their cars in dead storage. It is your duty, Mr. Dealer, to convince them that owning a car and operating it but part of the year is an economic waste that should be regarded as intolerable in these days of high-pressure efficiency; then it follows that the car owner should cash in on his old car and buy a winter or all-year car, or fit up the old car with a winter top. In either case, you are right at his elbow to serve him. Help him reason out the problem in the best way to fit his pocketbook and income, and then sell him the goods that will serve his future needs with particular reference to the coming winter season. Sell him hood covers, heaters and all the other comfort articles he requires and can pay for that will make his winter motoring experiences pleasant and worth while.

* * *

WINTER weather in many parts of the country is stormy weather and windshield cleaners are very desirable merchandise for motorists to buy. The driver of a car needs them the year around because rain and wind are likely to be present more or less at any season of the year. Put up a campaign on window shield cleaners, basing it on the liability of snow and sleet obstructing the view and making driving unsafe. More lights are needed in winter than in summer, the days being shorter. Push your headlight and spot light sales. Good lights and plenty of them are the initial features of any "Safety first" propaganda in the automobile field in the winter season.

* * *

HEATING devices of all kinds will find a big outlet all this winter. The enclosed top is not enough; real comfort comes with the heated interior. Exhaust heaters are an economy, a conservation of heat that otherwise goes to waste. Window display, newspaper advertise and form letterize these goods. Electric heaters are the kind that some motorists want. We have just heard of a self-heater, something new and novel, which has been described in the "Accessories and Garage Equipment" department. In addition to these, put on robes, heavy coats and cold-proof gloves, and you will have a campaign of winter selling mapped out for you that will keep you busy and bring into your till many an added dollar of profit.

* * *

WHEN a man or woman buys a car he or she has just started to buy—becomes a constant customer for gasoline, lubricants, tires, batteries, signals, slip covers, wax and cleaners, spark plugs, vacuum feeds, tire pumps, brake linings, new tops, piston rings, carburetors and their attachments, headlight lenses, robes, heaters, non-freeze materials, and many other articles. Are you on your tip-toes in a well considered effort to supply these follow-up goods?

* * *

DEAD storage last winter showed a remarkable slump. It should be given a toboggan slide this winter that will put it out of the motor trade vernacular. Garagemen and dealers may

profitably combine in this good work and thus make the winter season more profitable than ever before to themselves. Those who drive their cars in the winter-time are highly pleased with the experience. They find the use of a car, properly enclosed and heated, more of a necessity in the winter than in the summer season. A part of the propaganda designed to sell merchandise and service at this season of the year is that which gives cogent and convincing reasons why every available car should be kept "live" during the entire winter. Put the kibosh on the dead storage business department. It's a waste that amounts to the most foolish kind of extravagance.

* * *

TELL the car owners of your community not to blame their cars if they don't give a 100 per cent efficiency performance this season of the year. Blame themselves until they can get the cars to you for a thorough inspection and expert advice on how to operate them during the cold and frosty weather months. It's your business to help the car owner out in this respect, his business to make an income that will yield him all the pleasure and comforts of motoring, winter and summer, as well as the other things worth while in life. Tell the car owner to let you figure out for him the best way of handling and caring for his car and the right way. Lay the figures right before him—no camouflaging—and convince him that the right way—your service way—is the really cheap or real economy way. This is selling service, which is a large item in your stock of merchandise.

* * *

INSPECTION service sells goods. Where a garage has 30, 60, 80, 100 or more car owners as storage customers an inspection of these cars should be made every night and morning. Instead of waiting until the cars go out and defects are discovered by their owners while driving and then at places requiring the purchase of spark plugs, fan belts, etc., or the making of adjustments, which will put money into the pockets of other dealers and repairers, these inspections would disclose the needs in time to give the storing garagemen the benefit of this business. The writer knows several garagemen who have doubled or trebled their net profits as the result of inaugurating such an inspection system. Storage is a nice business with which to pay interest on money invested, rent, salaries, etc., but the sale of accessories and simple adjustment work will roll up net profits in a most surprising manner. Just think of the profits that roll out of your garage and into the pockets of "the other fellow," simply because you—that is, many of you—are foolishly "asleep at the (inspection) switch." The owner needs to be informed that his car has been inspected and has been found to require this, that or the other thing in order to give you an order for the goods or work, and insure a safe and pleasurable drive to the owner on his next trip out and added income to you.

* * *

LUBRICATION as a winter proposition requires special attention. Get the customer to buy the right kind of oil, the right make, at the right price to him and the right profit to you. Put in a window display showing an oil suitable for winter motor car use. Every motorist will be interested in what you have to say because he is interested in winter economy, winter comfort and winter service. Run ads in the newspapers which will reinforce the selling points of your windows, and then send out form letters to hit those that you have not reached by the other two methods, or to reinforce the messages to those who have been reached and haven't come across. Name the price in window, ad and letter, as every selling argument without a price is like a lever without a fulcrum. It can't lift anything.

Road Officials Ask Support to Build Military Highways

Association Requests that Freight Cars Be Furnished to Carry Materials for Thoroughfares of War Time Value

Strong efforts are being made by the American Association of State Highway Officials to keep the country's roads in good condition during the war period. The organization has brought the matter to the attention of the Government authorities by presenting to Direct General of Railroads William G. McAdoo the following resolution:

Whereas, The proper construction and maintenance of the highways of the country is necessary to the successful conduct of the war; and

Whereas, The plans of all highway authorities in the country, all users of highways, and all citizens interested in any way in highway construction and maintenance, are at the present time upset and tied up; and

Whereas, There is need for a definite policy so that plans can be formulated for the coming year; and

Whereas, A properly outlined policy directing the construction and maintenance of such roads and streets as are of general economic and military value will conserve the resources of the country and will greatly facilitate the transportation of freight over highways and streets; therefore, be it

Resolved, That the American Association of State Highway Officials request the United States Government to formulate and promulgate, as soon as possible, a definite policy for road and street construction and maintenance; and

That it is requested that said policy contain a statement that freight cars shall be furnished next spring for the transportation of the necessary materials for the construction and maintenance of streets and roads of economic or military value.

Dealer Wants Highways Kept Cleared in Winter

Alfred Reeke of Milwaukee believes that the roads between the larger cities ought to be kept open for traffic during the winter months. Mr. Reeke distributes Nash motor cars and trucks in the state of Wisconsin. He tells of an instance late in January when he could not deliver a truck to one of his sub-dealers about twenty miles away, simply because the road between Milwaukee and the other city was blocked by snow for less than a mile and a half.

Mr. Reeke tried to get the truck shipped by express or freight, but owing to the railroad freight congestion found this im-

possible. He thinks that the various associations of dealers ought to take this matter up with the state, county and township highway officials and plans made to have snow plows or some system used to keep main highways open in winter. He points out the fact that a good many of the smaller places would not have had the trouble from lack of coal that they experienced during recent weeks if they could have been reached by motor truck.

Chicago Trade Plans Second Used-Car Show

Announcement has been made by the Chicago Automobile Trade Association that it will conduct its second annual used-car show at the Coliseum during the period from March 30 to April 5 inclusive. Secretary Dan Beard of the Association has sent notices to members of the organization asking them to make their space reservations at once.

There is every indication that the number of exhibitors will exceed those of the first show. It is declared that more used cars were disposed of during the initial affair last Spring than in any like period. Practically all the vehicles displayed were sold during the progress of the show and were turned over to buyers when the affair ended.

"We expect a large attendance of out-of-town dealers who will come to Chicago to purchase a supply of used cars," Secretary Beard is quoted as saying. "The plan followed last year of having a technical committee inspect each car, tag it with such information and mark each vehicle in plain figures did much to inspire confidence. We shall follow the same plan again this season."

Little Coal Consumed by Automobile Manufacturers

Although the automobile industry ranks near the top in magnitude among all the manufacturing industries of the nation, it is a very light user of coal. According to the report of the U. S. Bureau of Census for the year 1914, it ranked in forty-second place in tonnage of coal consumed. Less than half a million tons were used in automobile and motor truck plants in that year, while thirty-one other industries used more than 1,000,000 tons each, six used

more than 2,000,000 and seven consumed more than 5,000,000 tons each.

Steel works and rolling mills used more than twenty million tons during that year, clay products companies more than eight and one-half million, cement plants nearly six and three-quarter million, and paper and wood pulp mills more than six and one-quarter million tons.

Webster Urges Caution Hiring New Employees

War time caution in hiring men is advocated by William M. Webster, commissioner of the National Association of Automobile Accessory Jobbers. He brings this out in a recent bulletin reading as follows:

A TIMELY SUGGESTION IN WAR TIMES.

¶ Hire no one until you have investigated the applicant's references in the last place of employment—better, the last two or three places—and if the applicant cannot account fully for the time between the last regular place of employment and his time of application to you, do not hire him.

¶ Be extremely careful with all applicants with German, Austrian, Bulgarian or Turkish names or antecedents and look out for and notify the authorities of all persons of whom you may be suspicious and who frequent your section or loiter around your plants or places of business.

¶ Have your electric wiring inspected at frequent intervals.

¶ Make sure that no strangers enter upon your property carrying suitcases or other bundles or bulky packages concealed in their clothing, and if strangers or even employees present themselves with such packages see that they are thoroughly inspected as to their contents.

¶ Place all oils, gasoline, naphtha or other materials of highly inflammable or explosive nature in places of safety and in charge of responsible help.

¶ Allow no waste or inflammable or combustible materials to accumulate in or about your premises or plant.

¶ See that all entrances, doors or gates that are not guarded are securely locked or fastened.

¶ Have frequent fire drills and have certain men instructed as to the exits to be used for their particular department. Have all your factory entrances guarded by loyal American watchmen on whom you can depend.

Freight Direct to Consignee Proposed by Philadelphian

H. B. Larzelere Suggests that Commercial Organizations or Associations of Merchants Handle All Small Shipments

Congested freight terminals would undoubtedly quickly become ancient history if the plan urged by H. B. Larzelere of Philadelphia was generally adopted. He is a veteran of the motor vehicle industry in this country and is now vice-president of the Vim Motor Truck Company. He believes that the railroads, city authorities or some business organization ought to take over the delivery of freight direct to consignees.

He has given his plan in detail in a letter sent to chambers of commerce, boards of trade and commercial clubs in every city of 25,000 and more population. His communication is as follows:

It is costing the manufacturers of this country \$765,665,600 in goods and the working men \$160,476,850 in wages to learn that our transportation facilities cannot be stretched 100 per cent. and still permit individual shippers and consignees to follow their selfish interests regarding the handling and delivery of goods in transit.

The chaotic condition in which we find our railroads today—the fact that freight lines, express companies and mail routes are swamped is not due to severe weather conditions alone, and a mere return of mild weather will not help matters. It is not due to a shortage of coal. Our business men must heed the general call from the Federal Government for help in this matter, which has now become a serious one.

Express Goods Classified

Railroads have always delivered less-than-carload freight to their own freight platform and let the individual consignee call there for it, or have an individual expressman call. The national express companies, like Adams, American, Wells Fargo, etc., have their own express platforms where their goods are classified immediately upon being unloaded from the express car and are transferred into their own trucks, which take them to distributing stations or directly out on certain routes.

It is perfectly practical to so organize freight distribution beyond the terminal so that this could be done with freight as well as express consignments. Consider for a moment what would happen if Uncle Sam refused to deliver any mail in any first-class city. The post office building would have to be materially increased in size and would have to have quite as many employees as now, if not more. Probably 90 per cent of the families in that city

would have to have their representatives go to the post office. They would use street cars and other public conveyances. Think of the trouble and cost and the extra tax on street car lines and public service facilities.

The cost to the Government on account of congestion would be considerably more than at present and in all probability they would be unable to handle the mail at two cents an ounce, or now three cents. Undoubtedly the cost to all concerned would be enormously increased. And any move on the Government's part in this direction would meet with public disfavor.

Nevertheless that is the way railroad freights are handled today. And they are handled that way simply because that is the way it has always been done and because the transportation and terminal facilities have been considerably more than adequate to take care of normal business. Again, there is no more reason why freights should be stopped at the terminal than that mail should be stopped at the terminal.

No Practical Objections

Before Government control of the railroads was put in operation there might have been certain practical objections to the carrying out of a system to take over the delivery of all less-than-carload freight to the consignee. Although the Government has no organization to take on this work at the present time, it is so important from the standpoint of the manufacturers of this country that it would be perfectly proper for them to take action in their own duly organized bodies.

To men familiar with merchandise delivery projects the course to be taken is perfectly simple. It would be necessary to requisition local express delivery companies now existent. By proper sorting of the freight and proper routing of the city, duplication of routes and the hauling of "part loads" which are so common at the present time, would be entirely eliminated.

Co-ordinate, route and systematize the express delivery lines and stop the duplication of routes.

This would relieve the highways of unnecessary vehicles.

It would relieve the freight terminals of freight congestion.

It would release freight cars that now have to be stored in the railroad yards awaiting their opportunities to get to the freight platforms.

It would give better and cheaper service to local merchants. It would enable the railroads to serve the whole country far better than they can at the present time. Undoubtedly Government action on a matter of this importance will come in time, especially as the need for it is getting more acute.

Nevertheless, each city can take its own action and reap the benefit of immediately cleared terminals at once in its own section. Each city will have its own particular problem to work out, but there is nothing new in the principle.

Half Dozen Could Start

A co-operative organization may be started as small as the limitations of the situation make necessary. A half dozen merchants might consolidate their deliveries and have all their vehicles superintended by one man stationed at the freight platform. More members could be added, and should be, as rapidly as possible until the work is so organized that your association with the approval of your city government has taken over the inbound freight platform and piers, sees that less-than-carload freight is transferred from the freight car directly to the truck that is assigned to the route on which the consignee is located.

The savings to the individual members of your association in service of this sort will be considerable and since it is fundamentally right, any section in which it is placed as an emergency measure will probably continue it as permanent after the war. As to the details of organizing co-operative freight transfer work, we should be glad to do our "bit" by giving you the advantage of suggestions from our Traffic Engineering Department, without any obligation whatever to you.

Warner Sees Big Field for the Trailer Industry

That there is a big field for trailers is the belief of A. P. Warner of Beloit, Wisconsin. Mr. Warner is best known from having given his name to the Warner Speedometer Company and the Warner Lenz. He has proved he is a keen judge of business possibilities connected with the motor car industry.

Trading as the Warner Mfg. Company he has established a factory at Beloit, where a number of models of trailers are made. The virtue of the product turned out there is established by the fact that the plant is working almost entirely on government orders. Mr. Warner is reported to have some ambitious plans for the trailer concern.

NEW NAME FOR KESTER SOLDER.

Announcement has been made by the Chicago Solder Company, 218 North Union avenue Chicago, of a new title for one of its products. The firm has decided to change the name of Kester crystal-core wire solder to Kester acid-core wire solder.

Maxwell Sales Director Announces New Tractor

Surprises Dealers at Chicago Show by Saying Vehicle Has Been Under Development for Five Years

T. J. Toner, director of sales for the Maxwell Motor Company, Detroit, provided the surprise of the Chicago show with the news that the company has, for five years, been developing a tractor and now is on the eve of production for this addition to the Maxwell line.

The tractor was revealed for the first time at the Maxwell-Chalmers Dealers' Dinner during Chicago Show week, its presentation being by means of motion pictures. Several reels of films were shown. Some 500 dealers present were amazed by the completeness of the new product, and the surprising new tractor features it embodied.

Tests of the machine were made under the supervision of P. R. Janney, Maxwell field engineer, on sugar and rice plantations in Louisiana and in other parts of the country.

Following are some of the specifications of the new Maxwell tractor: It is a three-plow machine, employing enclosed drive. Wheels are 48-in. in diameter. The motor dimensions are 4¼-in. bore by 6-in. stroke. A cone clutch is used. Crank shaft has three bearings of the following dimensions: Diameter, 2½-in.; lengths—front bearing, 3¼-in., middle bearing, 3½-

in., rear bearing, 4¼-in. Pressure oil feed with splash is used. There are three oil pumps to take care of the tilting of the tractor. Magneto is used for ignition with impulse starter. Governor and fan are gear driven. The governed speed is 900 revolutions per minute. Make of carburetor is undecided. Gasolene is fed by gravity from a tank of 26-gallon capacity. The cooling system contains 9 gallons of water.

The drive is taken from the clutch shaft to transverse shaft by bevel gear. A pulley is placed on one extremity of the transverse shaft and a cable hoist between the frame and the transmission case is on the same shaft. Reduction gearing, through shafts, back of the transverse shaft.

The tractor has three speeds on either drive or pulley gear reductions. A speed of 6 miles per hour is attained on high at 900 R.P.M. The intermediate or plowing speed is 2¼ miles per hour at 900 R.P.M.; low speed, 1¼ miles per hour at 900 R.P.M.

Transmission bearings are all anti-friction type with narrow center-to-center distances, not exceeding 14-in. at any point. The frame is the accepted tractor construction, of pressed steel, having a depth of 7-in. Oil tubes of the engine can be taken out and cleaned. This is an exam-

ple of the accessibility of the entire tractor.

The price has not been fixed, but the figure will prove to be low, it is stated.

Motor Vehicle Prices Show Slow Increase

One way in which motor cars have been slow is in following the world-wide price-increase movement in nearly all lines during the last three years. This fact has been developed in a surprising way by a comparative analysis of price fluctuations of automobiles and leading commodities just made by the National Automobile Chamber of Commerce, as shown in the accompanying table.

The average wholesale price of all the automobiles and motor trucks produced in the United States during the last six years shows a decrease each year ranging from 4.7 per cent to 16.5 per cent until last year, when there was an increase of 4 per cent. Prices of thirteen principal commodities, as reported by Bradstreet's index, decreased slightly until 1915. In that year they increased 18 per cent; in 1916 more than 28 per cent and last year more than 30 per cent. English commodity prices have increased 87.5 per cent since 1913.

Motor vehicles:

	Average Wholesale Prices.	Pct. Increase or Decrease.
1912.....	1000	....
1913.....	877	—12.3
1914.....	806	—9.81
1915.....	770	—4.7
1916.....	640	—16.5
1917.....	666	+4.0

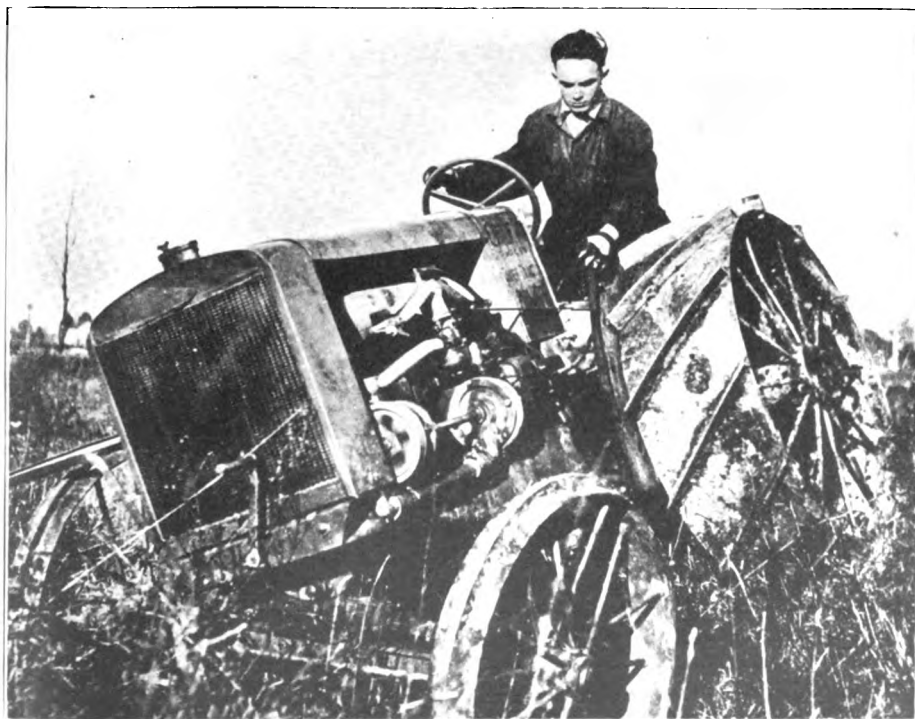
Bradstreet's Commodities Index:

		Percent Increase or Decrease.
1912.....	9.54	....
1913.....	9.23	—3.2
1914.....	9.03	—2.2
1915.....	10.65	+18.0
1916.....	13.66	+28.2
1917.....	17.81	+30.5

London Economist Commodities Index:

		Percent Increase or Decrease.
1912.....	2721	....
1913.....	2661	—2.2
1914.....	2760	+3.2
1915.....	3500	+27.1
1916.....	4779	+36.5
1917.....	5768	+20.7

To help relieve the freight congestion, the Mason Tire & Rubler Company has established truck service between Kent, Ohio, where the factory is located, and its distributor at Pittsburgh, Pa. Tires are regularly forwarded by truck to that point. This method of transportation not only relieves the railroads but places the company in a position to take care of its growing business.



Three Point Suspension Permits Work on Rough Ground.

Ohio Trade Association Has Organization Plan

Body's Whole Purpose Is to Give Broad and Varied Service to Its Members and the Public

Realizing the extraordinary demands which are now being placed upon the retail automobile trade, and its allied trades, the garage and accessory business, the Ohio Automobile Trade Association has developed within the past month a plan of organization and operation which is novel among trade associations. To quote from a pamphlet recently issued by the organization, "the whole purpose of the association is to give a broad and varied service to its members and to the public."

In order to give this service, the organization's work has very naturally fallen into two main classes: first, educational work among its members, and second, educational work among the general public. The first move was to organize the entire retail automobile trade of the state (which is defined as including motor car agents, accessory dealers, garage owners, repair men and tire dealers) to the point where the association may become self-sustaining.

December 1 last the Ohio Automobile Trade Association had something less than one hundred members. A general convention was called of all retail automobile tradesmen in Columbus December 4, 5, and 6, when plans were started for development along new lines. New officers and directors were elected. A fund of \$15,000 was pledged to carry on the organization's work until such time as it shall become self-sustaining.

Arthur M. Crumrine of Columbus, an advertising and merchandising expert, was employed to draft a plan for organization along modern business lines. A very complete plan was presented by Mr. Crumrine at a directors' meeting December 31, and work under this plan has been started. The organization of the association has been put up to the eleven directors elected at the December meeting. To each has been assigned one part of the state, for which he is responsible. Under their direction, there have been appointed county directors for each county, and under the county directors, sub-directors for each town.

State Is Canvassed

A canvass of the state by the executive officers has resulted in a complete list of persons qualified for membership. This list has been divided by districts, and subdivided by counties, thus giving the directors and sub-directors a complete list of prospects upon whom to work. Early this month a central meeting was held in Columbus, all county chairmen and directors being present. Details of the plan of

organizing each county were settled. Each man received his lists of prospects, and a complete outline of the plan of organization.

This gathering will be followed by meetings held in the principal cities of the state, to which prospective members in the outlying towns and country will be invited; where the work of organization will be still further forwarded. As a result of this intensive work upon the part of the members of the association, it is expected that the association will have a membership of at least one thousand by April 1.

As soon as the association is placed upon a firm and self-sustaining basis, a standards committee will be appointed by the president. This committee will make a thorough investigation into the standards and practices of operation practiced in various sections of the state, and will then recommend to the association a code of ethics and standard practices which will be used by all members of the association. Standard cost systems will be adopted, a uniform system of credit ratings established, and uniform scale of trade discounts established and maintained.

Plans Education in Selling

In other words, this branch of the association activities means the furnishing to all members of the body of such trade information and methods as have heretofore been available only to those retail tradesmen who were members of one of the great sales organizations of the automobile industry. It is also proposed that the association shall, with the assistance of its merchandising-advertising counsel, educate its members in modern selling methods and modern business practices. This will be done through the maintaining of a bureau which will prepare and distribute to members suggestions for sales methods, advertising plans, display ideas and means of securing publicity, etc. In this way it is thought that the smaller dealers may secure the benefits of the work which is now being done only for larger organizations in the big cities.

Adequate legal protection for association members is also planned. The passage of detrimental legislation will be opposed, and the work of securing remedial legislation furthered. Detrimental legislation will be fully tested, and members notified of their full legal rights under such legislation. When these means for educating and helping the members have been fully worked out and put into effect, it is expected that the organization will be com-

posed of men and firms who will be rendering only "reliable, prompt and reasonable service to the public at all times," and that the sign of the association upon the door of a retail establishment will be a guarantee to the public that such service will be rendered them.

High Standards of Business

When this point is reached, the association plans a campaign of advertising and publicity reaching all sections of the state, which will bring to the attention of the general public the things which have been done for their protection in the way of higher standards of business, the keeping in stock of none but dependable merchandise, and the general conduct of business upon modern service lines.

"What we are driving at," says President A. E. Mitzel of Canton, "is that when a man takes his car into a service station of any kind, and says to the man in charge that 'there is something wrong' that he will be assured of the same careful, perfect attention that he now secures when he takes his watch to a jeweler for attention. We want the public to know that by patronizing only members of the association they will be assured of reliable, prompt, reasonable service at all times."

Motor Trucks Save Money for Post Office Service

More than \$320,000 was saved by the U. S. Post Office Department by the use of motor trucks during the fiscal year ended June 30, 1917, according to the annual report of the Postmaster General. There were 774 motor vehicle routes in operation by the department during the year. In one of the cities where government-owned trucks were operated during the entire year, the motor trucks were scheduled to make 384,526 trips and there were only 132 failures or one failure to every 2,913 trips.

"It is desirable," says the report, "that existing legislative restrictions be removed and opportunity provided for the establishment of service by motor vehicle to rural communities that are entitled to better means of conveyance and communication with markets where produce may be disposed of to the best advantage and where the farmer producer can be supplied with necessary implements and supplies through the mails without the loss of time incident to a personal trip to such market centers."

NEW DISTRIBUTORS FOR MANLEY GARAGE EQUIPMENT.

The United Engine and manufacturing Company, Hanover, Penn., has appointed Jessop and Thompson of Chicago, distributors for Manley garage and ship equipment. The distributors are located at 1169 South Michigan avenue, and will have as their territory: Illinois, Ohio, Indiana, Michigan, Minnesota, Wisconsin, Iowa, Missouri, North and South Dakota.

Suitable Garage Building Should Be Practicable

Structure Ought to Be Attractive in Appearance but Efficiency Is Greatest Factor to Consider in Making Plans

The first question to be considered in the construction of a garage is—is it practicable?

No matter how artistic or how finished it must be laid out along the lines of an efficient garage. It pays to build in an attractive, clean-cut way. Nothing to get dilapidated should be included in the design. Certain arrangements have been worked out that have proved themselves to be the best, giving the most room and the greatest convenience for each size of structure.

It is poor economy to use cheap materials. Labor is the big item of expense anyway, and it costs just as much to put together cheap material. Furnish good, substantial material as it will cost very little more.

Don't always take the lowest bid. The low bidder is frequently a mistake maker. In the end you will pay for his mistakes. Deal always with a responsible builder, one who has a reputation for honesty and good work to maintain.

It is well to remember when questions of costs are being considered that the cost of carrying out any design may vary greatly according to local conditions.

The garage building shown on this page is a popular model, calling for pressed brick with white cut stone trimming. The panel above the front doors and windows is treated with brown stucco, with white wood laid in for trimming. The large windows on the front come close to the ground with iron rails for protection

against breakage, thus affording good light in the private office and show room.

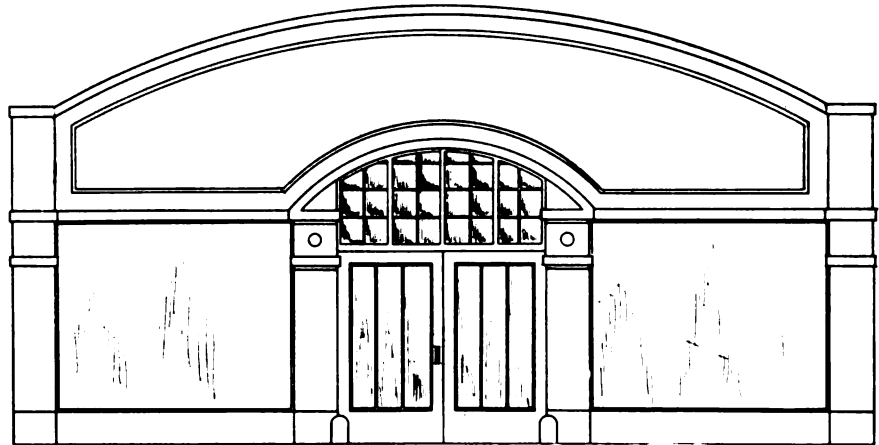
The show room has ample room for one car, a desk and chairs, and is also fitted with lavatory and locker. By having the show room apart from the stock room the customer's attention is not distracted by those wishing to purchase supplies. The large front doors which open inward are electrically operated from the office, making it unnecessary for the driver

tained through the skylights and the windows in the rear. The boiler room is located in the rear on the right side of the building below the floor. The floor is raised slightly along the center, to obtain drainage toward each side.

The walls and ceiling in the private and general offices and show room are plastered and decorated with artistic panels. The floors are laid in white mosaic tile.

As the show room is an important feature, it must be made attractive. It is illuminated by indirect lighting, also by a row of lamps located at the bottom of the front window and concealed, with reflectors which are used only at night to show the car off to its best advantages.

As it is our aim to aid our readers, we have established an architectural department which is at their disposal when planning a new building. As it is im-



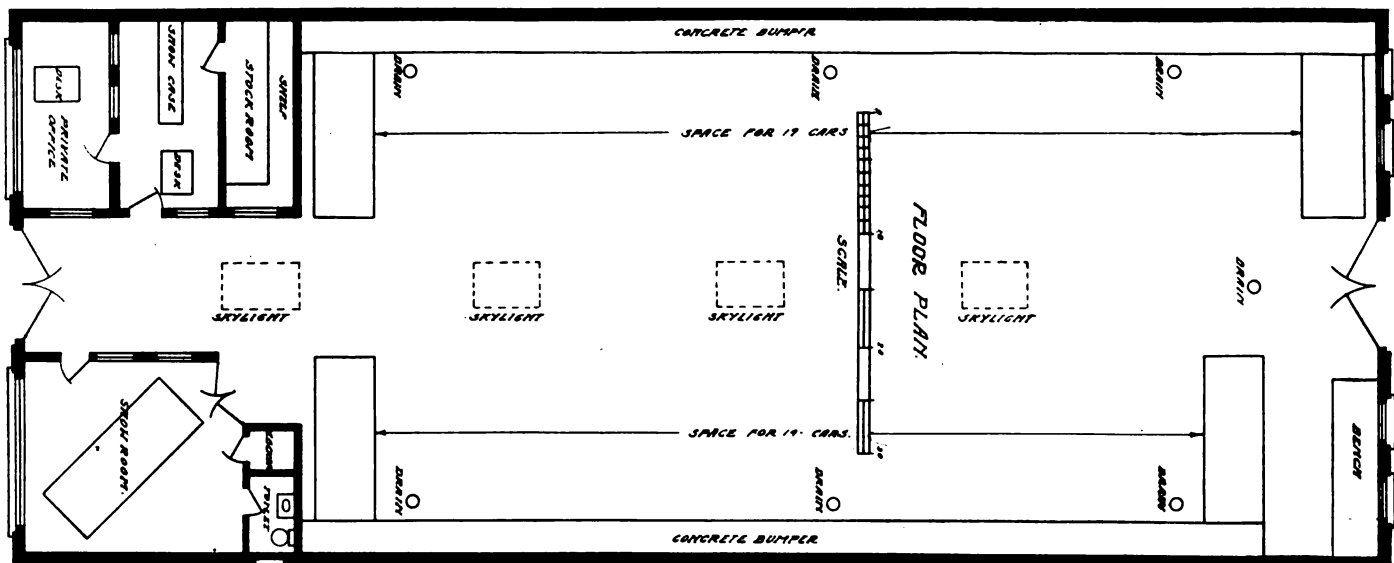
Front Elevation Showing Electrically Operated Doors.

to leave the car or for the attendant to leave the office.

The garage proper or storage section is laid out for thirty-one cars, with ample runway between. Along the wall on each side are concrete bumpers to prevent the cars from striking the wall. The steam pipes for heating follow the walls just above the concrete bumper. Light is ob-

practicable to carry stock plans to meet the requirements of each individual, each building is designed separately. Complete building plans and specifications are furnished.

The work done is based on a time and material basis, charging only for draftsman's time and material used, thus affording a large saving.



General Layout of Building.

Standard Cost System Needed by Truck Owners

Different Methods of Keeping Expense Accounts Prevents Comparison of Operating Data— Uniformity Is Urged

By S. V. NORTON.

Perhaps one of the most urgent needs of the motor truck industry today is for a standard system of keeping track of truck operating costs. A large number of truck operators are either not making or not saving the money they should from their trucks. Many of them are actually losing money. Why is this? Simply because truck owners have been too busy delivering their goods to ask themselves, first, "What does it actually cost me?" and, second, "What ought it to cost?"

With the necessity for war time economies the need for keeping track of motor truck costs is more urgent than ever. In the past many cost systems have been devised and distributed to motor truck owners. While these systems were generally compiled by experts and were complete they were not uniform. Different systems treated various items of expense in different ways.

A standard system setting down a uniform method of figuring truck costs would provide a common language by which the experience of all truck operators in the country could be related and understood. It would unlock a great storehouse of information which is at present closed to the motor truck owner.

Any individual system, however well designed, cannot serve the motor truck industry adequately so long as several other cost systems, which also may be well designed, are in existence. The difficulty comes from a lack of uniformity in the treatment of various items of expense. Truck owners who use systems which have been compiled by authorities on motor truck accounting or by general expert accountants, and which are generally complete, show results which are not subject to comparison because of varying methods of computing identical items. There are, for instance, at least four methods of figuring depreciation.

Depreciation Figures Vary

Two truck operators, A and B, use systems devised by competent accountants. A's cost system provides that depreciation shall be figured at 20 per cent a year, charging off the entire cost at the end of five years. B's system declares that depreciation must be figured on a mileage basis, allotting 80,000 miles as the expected life of the truck. Both operators use cost systems devised by experts, yet the difference in computing this one item alone may amount to \$100 or \$200 a year.

If all or even the great majority of truck owners began to figure depreciation according to the standard formula an enormous gain would be accomplished, for a common denominator would be established by which one truck could be compared with a thousand other trucks in respect to this item.

A well conceived motor truck cost system should reveal:

Number of trips.

Customers or deliveries.

Total loads in units.

Average load in units.

Miles traveled.

Round trip distance.

Unit—miles.

Miles per gallon of gasoline.

Miles per gallon of oil.

Standing time at plant in hours and minutes.

Running time in hours and minutes (including stops).

Average loading time per trip.

Average speed in miles per hour.

Estimated running time per mile.

Estimated time per customer's stop (in minutes).

Cost per day (at work).

Cost per mile.

Cost per unit—.

Cost per unit mile.

Now suppose a standard system were adopted and widely used which would enable a great many truck operators to compute these items in the same way. The benefits to truck users would be enormous. A comparison of figures would bring to light many possibilities of economy, as well as many causes of waste. Expensive methods would have to go, time-saving and money-saving ideas would spread throughout the truck using public.

Doubt as to Supplies

Take the matter of supplies. A great deal of doubt exists today in the minds of truck owners as to which oil, which tires, which accessories of all kinds are the "best." Many owners admit there seems to be no way of finding out. Suppose now that a considerable number of truck owners kept their tire costs in the same way.

The reports from dozens, perhaps hundreds, of truck owners, rendered in a uniform way, would tell a convincing story. They would establish proof where heretofore there was guess work.

Consider the matter of maintenance or repair. Every reputable truck maker is

searching constantly for information which will enable him to perfect his product. The world is his laboratory and he would like nothing better than to receive reports from all his customers which would describe the shortcomings and lay bare the weak points of his truck.

Unfortunately this information is not yet available to him, except in fragmentary form. And even in those rare cases where he does receive the complete history of an installation, the story is apt to be, as it were, in a "foreign language," which must be translated or interpreted before it can be of use. The same may be said of the maker of parts.

What former attempts to establish a standard cost system have lacked seems to be abundantly supplied in the movement now well under way by the Truck Owners Conference, Inc., at Chicago. It is hoped that this movement will result in a cost system being approved which may fully take the title of a standard system. The movement is by far the most encouraging sign of action toward this end that the industry has yet seen, and as such deserves the support of every truck owner, manufacturer and maker of truck parts.

New Liberty Truck Axle Arouses Great Interest

Much interest has been aroused among truck manufacturers and engineers by the advent of the new Liberty axle, manufactured by the Wagner Axle Co., Anderson, Ind. While a new axle, it does not embody any radical ideas or wide departures from accepted principles of truck axle construction.

It is a worm gear axle of the semi-floating type, equipped with the N & G differential, so designed that both rear wheels will always have traction. This, of course, eliminates all spinning or skidding and makes it practically impossible for a truck equipped with Liberty axles to "stick." The saving in tires, time and labor and the protection against possible breaking of axle, can also be readily appreciated. The worm is 3½ per cent nickel steel, the gear of special phosphor bronze and the differential case of cast steel. The differential gears rotate in an oil bath.

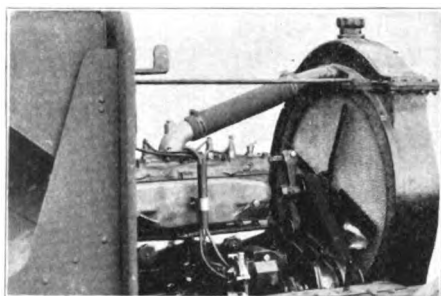
Liberty axles are made in 1½, 2, 3½ and 5 ton sizes.

The Wagner Axle Company has been recently organized with a capital of \$2,000,000 and occupies a plant more than 14½ acres in area. The plant is running at top capacity and employs about 500 persons. H. P. Harding is president and general manager. If the Wagner Axle Company had attempted to fill every order received, the 1918 production would have been exceeded by more than 90,000 axles. The 1918 output, however, will be in the neighborhood of 15,000 axles.

In the Truck and Trailer Field

Fulton Truck Bettered But Appears Unchanged

While some changes have been made in the power plant and transmission, the outward appearance of the 1½ ton Fulton truck made by the Fulton Motor Truck Co., Farmingdale, Long Island, has been unchanged. The engine now used is a more powerful one than its predecessor, being a 4 cylinder motor with 3¼ inch bore and 5 inch stroke. While it is possible to make 25 miles an hour with the truck, the makers recommend 15 miles an hour as more economical.



The Fulton Engine.

The rounded Fulton radiator, which has made the Long Island product so easy to distinguish, is still used. The fuel is fed by gravity from a tank attached to the dash board.

The Russell internal gear shaft drive rear axle is used, somewhat stronger than the one used on last year's model. The front axle is a bit larger than the one formerly used. One leaf has been added to the springs, so that each now has 11 leaves.

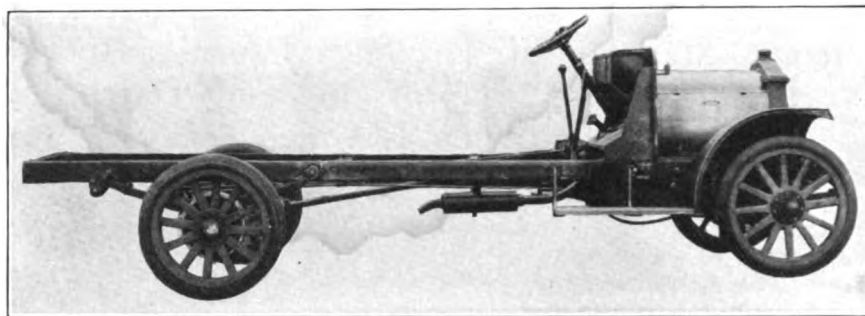
The single solid tires are 34 by 3½ inches on the front wheels and 34 by 5 on the rear wheels.

The Economy of a Trailer.

Selling trailers requires a knowledge of when a trailer is an economy and when it is not. The salesman must be an expert, able to diagnose a case of sick transportation and prescribe a trailer when it is indicated. Selling goods that are a misfit never builds up a business.

The trailer must properly supplement the power unit. It must be built to travel as fast as the truck to which it is attached, or it will slow up the speed of the truck and perhaps offset the advantage of carrying the double load.

A trailer is economical when it can be loaded while the truck is making a trip, thus permitting the carrying of a double load on every alternate trip. Two trailers can be utilized to a further advantage. Trucks are too valuable to stand idle and should be kept moving, and the time lost in loading should be kept at the minimum.



Side View of Fulton Chassis.

One authority states that it costs \$16 a day to operate a 5-ton truck, or \$1.60 an hour and 2⅓ cents a minute; it costs \$4 a day to operate a trailer, or 40 cents an hour and ⅔ cents a minute. Every hour or minute which these two units are not moving represents a loss indicated by the figures named. Figures will tell the story in every transportation problem. The relation of truck and trailer to the merchandise to be moved and their relation to cost will determine the equipment, and inadequate equipment should be remedied by trailer sales to the right parties. If you cannot make the figures in any given case, send us the facts and we will do the figuring for you.

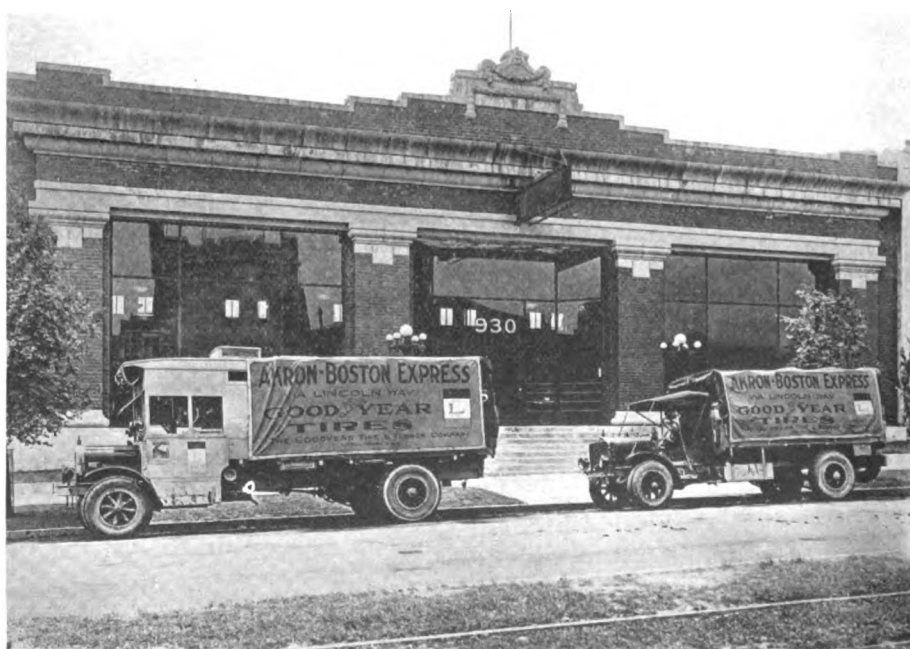
Motors Serve Red Cross.

Services of 400 motor vehicles are required for the transportation and distribution of American Red Cross supplies in France, according to a report of the War Council of the Society. There are 250 motor trucks that handle 350 tons of supplies daily at French ports. In Paris alone

200 tons are received daily, of which 125 tons are delivered by motor to branch warehouses at other cities and points along the front from the North Sea to Switzerland. The society is preparing to operate motor bus lines through Switzerland from the French to the German border to transport repatriated and exchanged soldiers.

Delivering Trucks by Road

Thirty thousand army trucks ordered by the War Department will be driven over the roads from the factories in the Middle West to Atlantic ports for shipment to the front in France during the present winter and coming spring. Fifteen thousand freight cars would be required to haul the 30,000 trucks by rail, and 2,250 additional cars to carry the cargo of spare parts and supplies that will be transported on the trucks. With fifty cars to a train, there would be 345 trains. The plans will therefore release 17,250 cars and 345 locomotives and train crews for handling other essential freight.



White Trucks in Akron-Boston Service of Goodyear Tire Firm.

Make the Bookkeeping A Business Barometer

Guess Work Should be Ended

WE HEAR much talk these days about systems and accounting of garages and repair shops. Why all this discussion? It is simply because you are connected with America's third largest industry.

You are interested in an enterprise which never closes its doors. A business that operates every hour of each day. Do you get the profits which a NEVER CLOSED business should produce?

Were you able to compare the result of the year 1916 with 1915? Or the result of the month of May with the month of April? Did your bookkeeper hand you on June 1st an operating report showing you your gains or losses on storage, gasoline, oil, accessories, repair work, and tires?

If you had no such report handed to you, any comparisons you might make of one year with another year or one month with another month will be only GUESS-WORK. STOP GUESSING—DEMAND FIGURES. WATCH THE FIGURES—FIGURES STATE FACTS.

Following is a section of a garage monthly operating report covering the item of STORAGE for one month. The figures stated are for illustration purposes:

Storage sales	\$4,500.00	
Storage costs:		
Garage wages (31 days).....	\$1,600.00	
Rent	1,200.00	
Electricity	120.00	
Water	35.00	
Heat	200.00	
Garage supplies	70.00	
Total storage costs.....	\$3,225.00	\$3,225.00
*Storage profit for month.....		\$1,275.00

W. M. Haradon, president of the New York State Garage Association and an authority on garage management, says: "A single monthly report is a periscope on the pulse of a garage—it gives the proprietor essential facts."

I have picked out the item of STORAGE because it interests us all. It is the garage manager's most important topic.

The heading STORAGE SALES is arrived at from your storage charges. This can be had from your duplicate copy of your bills which are rendered to your customer.

The heading STORAGE COSTS is the topic which most garages never consider. Nevertheless it is necessary in obtaining the profit on storage.

Storage costs is comprised of six items:

1—GARAGE WAGES. This figure is arrived at from your weekly payrolls. The important item to be watched here is that you charge to each month the actual number of days in the month.

2—RENT is based on the monthly amount for rental of the garage. Should the garage company own the building you would substitute taxes for rent.

3—ELECTRICITY is made up from bill rendered.

4—WATER is made up from bill rendered.

5—HEAT is made up from coal bills rendered.

6—GARAGE SUPPLIES is composed of articles used in washing, polishing, and cleaning cars; such as soap, sponges, polish, whisk brooms, chamois, wipers, kerosene and dusters. The total amount used for a month is arrived at as follows:

Garage supplies, inventory April 1.....	\$500.00
Garage supplies, purchases during April.....	125.00
Total	\$625.00
Garage supplies, inventory May 1.....	\$555.00
Garage supplies used during April.....	70.00

If your books do not give you information to take off a report on storage as shown above, THEY SHOULD. It costs no more to have the desired records than to have complex and useless books.

Associations

PROF. A. E. SWANSON, of Northwestern University, in a recent address before the Chicago Advertising Association, paid trade associations a high compliment and prophesied for them an important place in the government-recognized administration of business. He said:

"The business associations can do those things which are too large for the individual business man to do and they should therefore be recognized by the Government and be given well defined powers and responsibilities, subject to Governmental supervision. The creation of the Department of Commerce, the Interstate Commerce Commission and the Federal Trade Commission is but the beginning of a system of business supervision, regu-

lation and encouragement, that is certain, in my opinion, to result in the recognition of the business association and its legitimate functions as a factor in serving and conserving the business and public interests."

This is a brave and timely utterance and its logic is attested by the good work already accomplished by the associations in systematizing trade practices and eliminating trade abuses, and the recognition already accorded them by committees of Congress and state legislatures, administrative bureaus and officers, and the judiciary of the land foreshadows further and more complete recognition.

Prof. Swanson stands alone among the collegian business economists of the world today on this proposition, however; a little later he will be the center of a great crowd.

Milwaukee Dealers Have Successful Truck Show

Exhibitors Very Enthusiastic Over Results — Many Prospective Buyers in Attendance.

Milwaukee dealers, who were not unanimous in their belief that their truck show plan was a good one, are now enthusiastic converts of the idea. They held it in the Milwaukee Auditorium, Thursday to Saturday, January 24 to 26, after the completion of their passenger car exhibition. No attempt was made to make a profit at the gate, admission being by card. The exhibitors sent out invitations to their own lists of prospects and the Milwaukee Automobile Dealers, Inc., also sent out cards of invitation to the 2800 members of the Milwaukee Association of Commerce.

When show visitors came to the building they turned in their invitations at the box office and exchanged them for admission tickets. As these cards had the name of their firm and very often that of the individual bringing it, the exhibitors were able to keep close track of the men who visited the building.

More than 2000 such cards were turned in on Friday night of the show. There was a big attendance that night as many of the card bearers brought friends with them. The exhibitors united in saying that it was a bigger and better crowd, in a business sense, than had been present any time during the passenger car show, with the exception of Saturday night. A great many new prospects gave their names to exhibitors.

The Milwaukee tradesmen handled the double exhibition on broad lines. The association arranged for ten full page newspaper advertisements, the copy being written by E. LeRoy Pelletier of Detroit, the Reo advertising counsel. These advertisements were signed by the Association alone, no individuals or firms having their names in this copy. The idea was to sell the virtues of motor vehicle transportation for men and materials to the public. In addition to printing these pages in some of the Milwaukee papers they were also inserted in six of the leading papers outside of the state metropolis.

Special efforts were made to get as many dealers from out of town to visit the show as possible. A get-together gathering was held at a Milwaukee theatre Tuesday evening, January 22. It was a part-business, part-social affair, starting at eleven at night and lasting until two in the morning. Mr. Pelletier made the opening address. He wanted to stop at the end of 45 minutes but the audience yelled for more. Bart. J. Ruddle, secretary of the dealers' organization and the show manager, and others also made addresses. The Milwaukee

Journal, which had printed the ten pages of advertising at different times, got out a dealers' extra of 12 pages, in which the 10 pages were reproduced, and distributed copies of these to the 1100 dealers who were present in the theatre.

THE VEHICLE EXHIBITORS.

Pauly Motor Truck Co., Commercial Equipment Co., Rathmann Motor Truck Co., Ford Motor Co., John H. Ryan, M. D. Newald Co., Sterling Motor Truck Co., Kissel-Kar Co., Edwards Motor Car Co., Geo. E. Roberts, Stegeman Motor Car Co., Curtis Auto Co., Bluem & Hartung, Kelly Springfield Co., Alfred Reeke Co., Emil Estberg, Jonas Auto Co., Titan Truck Co., Auto Truckservice Co., Buick Motor Co., General Motors Truck Co., Milwaukee Bethlehem Sales Co., Indiana Truck Co., International Harvester Co., Milwaukee Locomotive Mfg. Co., Smith Form-a-Truck Sales Co., Truxtun-Hudford Sales Co. and The Hell Co., all of Milwaukee; Onelda Motor Truck Co., Green Bay, Wis.; Warner Mfg. Co., Beloit, Wis.; Highway Trailer Co., Edgerton, Wis.; Winther Motor Truck Co., Winthrop Harbor, Ill.; O'Cennell-Manly Truck Co., Waukegan, Ill., and Master Truck Co., Chicago, Ill.

THE ACCESSORY EXHIBITORS.

Schueler Bros., Babcock Auto Spring Co., Lemke Electric Co., Bartles-Maguire Oil Co., Pan-American Rubber Co., Racine Auto Tire Co., Storage Battery Service Co., Wadhams Oil Co., Inglis Mfg. Co., Julius Andrae & Sons Co., Kunz Wheel Co., United States Rubber Co., Universal Milling Machine Co., Champion Spark Plug Co., Wisconsin Magnet Exchange, Hoppe Hatter Motor Co., O'Neill Oil & Paint Co., P. L. Gross Hardware Co., Shadbolt & Boyd Iron Co., C. C. Ritze, Western Motor Supply Co., Milwaukee Cylinder Grinding Co., Auto Supply Co., Reeschenberger Bros., Cook & Bloedel, R. J. Grant & Sons Rubber Co., all of Milwaukee; Sewell Cushion Wheel Co., Detroit, Mich.; Janesville Products Co., Janesville, Wis.; Presto-Cloth Mfg. Co., Toledo, Ohio.

New Fulton Salesmen.

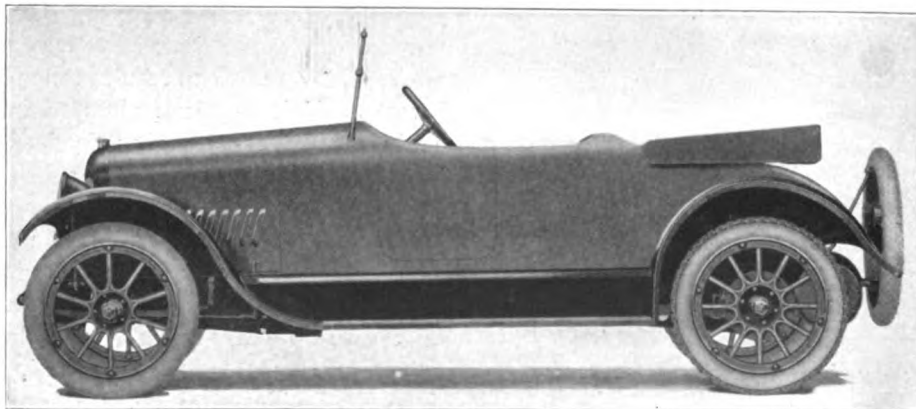
W. F. Melhulsh, Jr., president and general manager of the Fulton Motor Truck company, of Farmingdale, Long Island, has been adding constantly to the sales force of the company, and recently announced the connection with the company of several men of nation-wide prominence and of national standing in the motor truck field, including M. S. Keyes, W. P. Butler, A. R. Thomas, L. S. Caswell, A. B. MacGowan, and Charles V. W. Smith. Mr. Keyes was formerly with the King Motor Car company. Mr. Butler was at one time connected with the Stewart Motor Truck company. Mr. Thomas was for some time with the Denby company. Mr. Caswell has been a member of the automobile trade for about 15 years, and in the earlier days of the business was instrumental in organizing the American Distributing company, which sold Timken bearings and other well-known products. Mr. MacGowan was until recently assistant sales manager of the Chase Motor Truck company. Mr. Smith, special representative of the Fulton company, has been at work on special work for some time for the company.

Officials of Elgin Firm Predict Shortage of Cars

Officials of the Elgin Motor Car Corporation of Chicago believe that there is to be a shortage of cars during 1918. The Elgin concern is in position to vastly increase its output for 1918, through the completion of its new factory buildings in the Elgin group at Sixty-first and Archer avenue, Chicago. The growth of this company compelled additions last year, and C. S. Rieman, vice president and general manager, foreseeing the future, rushed to completion a new plant 2½ blocks long, and a large administration building.

"We believe," said Mr. Rieman, "that the automobile business is and should be the first to help win the war, and we of the Elgin Company are going to do our part in every way to assist the government, and stand ready to accept all suggestions from the government, of methods by which we can give aid. The automobile is becoming more and more a necessity in the business of the country, and we feel that the demand for the passenger car as a business asset will grow instead of diminishing, as the days go by."

The company has recently added a four-



New Elgin Four Passenger Model.

The American Machine Products Co., Marshalltown, Ia., have announced the appointment of the Fulton Sales Co., 910 S. Michigan Blvd., Chicago, as the exclusive selling agents of their "Ampeco" products.

passenger model to its line, which aroused much favorable comment at the Chicago Show.

Success of Chicago Show Exceeds All Predictions

Accessory Exhibitors Get Many New Buyers—Truck Makers Hold Outside Displays.

All predictions regarding the success expected for the Chicago show were bettered. The attendance was a good deal larger than even the enthusiastic exhibitors or Show Manager S. A. Miles expected. This in spite of the fact that the weather man furnished the north pole atmosphere that he generally does for the annual big Western exhibition. No trucks were seen in the show itself but a good many individual truck exhibits were staged at hotels or the stores of the Chicago dealers.

Not the least interesting feature of the show but the interest displayed by dealers in taking on new lines of accessories. Many of these men told exhibitors of different fittings wanted for their cars by customers who had them advised they intended to keep the cars purchased last year and make them more presentable by buying added equipment.

This feature of the business seems likely to be quite large this year, judging by the remarks concerning it heard in the Coliseum and First Regiment Armory.

The difficulties of the railroads also sent quite a number of new prospects to the makers of smaller cars. These were heads of firms employing traveling salesmen who have had difficulty in covering territories owing to the railroad delays. A good many of these men will cover their districts, beginning in the spring months, by automobile instead of by train as formerly.

Valve Maker Wires Plan to Fuel Director Garfield

While many of the manufacturers of the country objected to the "heatless" days edict of Fuel Administrator Garfield, at least one constructive suggestion in connection with the situation was made to him. It came from M. Charles Schweinert, treasurer and manager of A. Schrader's Son, Inc., the big tire valve making firm of Brooklyn. It was a telegram reading as follows:

This is not criticism but simply a suggestion which I hope may help in the present emergency. Instead of making the workers of the country idle for a certain number of days would it not be better to mobilize them for emergency work in this crisis? For instance, for every plant which will shut down through the issuing of your order there are a number of men who could do work at moving coal and loading and unloading the freight cars.

By the daily papers we are told that there is a great accumulation of coal at the Jersey Shore of New York Bay. Why not mobilize all trucks—especially the automobile trucks—in Greater New York and send

them to Jersey for some of this coal; thus relieving the coal scarcity in Greater New York? In order to get the trucks across the Hudson River put into service every ferry boat in Greater New York. I believe it is true that most of the ferry lines do not operate to their full capacity during the greater part of the day. If their boats were operated full time they could move across the river an enormous quantity of coal, thus releasing the coal cars to return to the mines for more coal.

Strong men, accustomed to, or fitted for, outdoor work would be put to work at unloading freight, and I am sure that each concern in Greater New York and the rest of the country affected by the shut-down would be willing to contribute whatever number of men and trucks that are fit for this work, and pay them their regular wages if, through such an arrangement the operation of their plants would not be interrupted, but would be permitted to run with such a force as is left.

I think this plan should recommend itself to you if for no other reason than that it will save the working people the wages which they will lose through the shut-down. This would cause unthinkable suffering. Besides this at this time we should not create idleness but rather use our labor in such a way as to speed up the prosecution of the war.

We should follow the example of France at the Marne and under an extraordinary

condition do something extraordinary. France by using means unthought of before to move her soldiers stopped the German advance. We should try in this crisis by unusual and unthought of efforts to relieve matters and not sit down and rest in idleness. Our concern offers four motor trucks, thirty men, two men for engine room work on ferry boats and I personally am willing to serve in any capacity should you desire my services.

Fairness Brings Success for Milwaukee Dealer

Fair dealing and boosting is held responsible for his success by S. B. Jack, owner of Jack's garage, at Milwaukee, Wis. He conducts a show room and service station at 691-95 Mitchell Street, where he sells Maxwell and Moline Knight cars.

He was born at Manistee, Mich., April 21, 1884. He is a machinist and for a time was chief inspector of the Beaver Manufacturing Company at Milwaukee. He is a firm believer in the virtues of trade associations and proves this by membership in the Milwaukee organization. His business has grown so that he has taken in as an associate and partner Stanley Kotowski, who had charge of the test room of the Beaver Manufacturing Company's plant for five years.

Mr. Jack is of the opinion that what success he has had is due to his following out of five rules, as follows:

First—Don't misrepresent your car.

Second—Sell your car to a man who wants an automobile in your class.

Third—Treat your customers right and you will make friends this way.

Fourth—Give proper service.

Fifth—Sell your hammer and buy a horn—in other words, don't knock other cars.



Jack's Garage and Sales Room.

The Industry, Men—the Editor

Opportunities for Sales

Sales opportunities are to be found at almost any place a dealer in accessories goes to away from his own store. About all that is needed to realize on them is to carry a small pad of paper, and then keep watch for cars that could or should be fitted with some of the accessories handled by an aggressive automobile merchant.

One enterprising car dealer in a western city, who has maintained an accessory department for several years, has used this plan with very good results. He takes his pad along when he goes to baseball or football games, athletic meets and political gatherings. There he notes the numbers of the cars that might be equipped with spot lights, extra tires, spare wheel carriers, windshield cleaners or any other devices he sells.

When he returns to his store he looks up the names and addresses of the car owners from his registration list to get the addresses for his sales letters. He tells in these letters of having seen the car, and thinking that perhaps the owner had not thought of fitting it with the article he describes, he then goes on to tell about these fittings, how easily they can be attached and what a great comfort and convenience they are and gives the prices of each.

He has also found that the gatherings of cars in the neighborhoods of theaters also give him many names of prospective customers. He sells a great many of these people immediately as a result of his original letters. Others do not buy until later, but he has found that this plan is one of the best advertising campaigns he has ever used. It can be done in any part of the country by any dealer who is energetic enough to put it into operation.

Will Overcomes Weather

Some striking testimony as to how big a factor the weather really is in so far as acting as an obstacle to the sale of motor cars is concerned was given during November and December in Detroit. It seems that the Simons Sales Company had won a two months' sales contest with the St. Louis Overland distributors some time during the summer when it might have been figured that the weather conditions favored the motor car metropolis.

When the weather became colder and the advantage might appear to be with the southern city Mr. Simons believed his men could repeat their feat of selling more Overlands during a given period than the Missourians could. So he challenged the St. Louis delegation to another battle of business in which sales were to be the ammunition. Even though November and December were picked as the time of the struggle the Detroiters won out again. This was at a time of the year when a good many folks might have been thinking of putting their cars up for the winter unless there was an

energetic automobile or accessory dealer at hand to show them how well they could use their cars even if the temperature was not always such that overcoats were not needed. But the Detroiters forgot the coming of colder weather and went after prospective buyers with such enthusiasm that they bettered all their former business-getting records.

Co-operative Advertising

Striking evidence of the virtues of united endeavor have been furnished by the automobile tradesmen of an eastern city. Instead of making spasmodic efforts to combat the idea that theirs was one of the "non essential" businesses, so far as the ideas of the Government at Washington and the general public are concerned, these tradesmen pooled their resources.

They attacked public opinion through the medium of full page newspaper advertisements which were signed by the individuals and firms that joined in the government. Their example could well be followed by dealers in every section of the country.

War Highway Needs

Having been forced for years to plan their movements many months in advance the men composing the American Association of State Highway Officials have not waited until Spring before taking steps to bring the needs of road builders to the attention of the proper authorities at Washington. These men believe that highways, especially those having value as military roads, should be built and maintained with the heartiest support of the government. They have accordingly sent a resolution embodying their ideas to Secretary of State McAdoo in his capacity as Director General of Railroads. They hope that their measure will receive support not only from government officials but also from the public at large.

Look Into the Truck Business

It is very unlikely that the demands of the war department on the automobile manufacturers for the production of munitions will make such serious inroads in the number of cars turned out as was originally expected but it is certain that it will make some difference. With this fact in mind it will be well for passenger car dealers as well as owners of well equipped garages to carefully investigate the profit outlook of selling motor trucks.

The motor truck field has been neglected by passenger car agents as well as garage men. There is no reason why thousands more of them should not be laying a foundation for a growing and fine business in years to come, and finding the foundation willing to pay its way as it goes.

Sales Reach Million Mark for Twin City Exhibitors

Displays of Passenger Cars, Trucks, Tractor and Automobile Accessories Housed in Largest Show Building

Record breaking success attended the great show held by the Minneapolis and St. Paul dealers in the week ending February 9. Walter R. Wilmot, who managed the affair, said that the number of visitors was even greater than they had expected, and that the tractor men were especially pleased at the business they had done. The attendance was 178,260.

It is declared that sales of approximately \$1,000,000 worth of merchandise were made during the week. The show was officially styled the Twin City Automobile, Tractor, Truck and Industrial Exposition. The sales total was made up as follows: passenger cars, \$425,000; tractors, \$200,000; trucks, \$48,000; industrial section, \$250,000, and accessory dealers, \$45,000.

The Twin Cities branch building of Willys-Overland, Inc., in which the Twin City Show was held, is the largest building in this country ever devoted to automobile exhibition purposes. It contains 320,000 square feet of floor space. More than 7,000 cars can be stored in this building. The New York show occupies 107,000 square feet of space, the Chicago show, 90,000 square feet, and the Boston show, 115,000 square feet.

Breco Rectifier Praised by Electrical Experts

Both Thomas A. Edison and Professor Geo. S. Macomber of the Cornell University Electrical Laboratories have said good things about the Breco converter or rectifier. This particular device was invented

by T. J. Murphy, who believed that there was a big field for a comparatively simple device to convert electric current from alternating to direct. It is used for both electric car and truck storage battery charging as well as for moving picture arcs and power.

All parts of the converter are of durable construction, not easily damaged and except for renewing of brushes the converter should last for an indefinite period. The flow of inverse current through any translating device in circuit with it is entirely eliminated. This does away with deterioration in the plates of the storage cell.

The converter is self-starting so that if for any reason the supply service is discontinued the converter will stop charging and cut out the batteries. When the current is re-established it will start charging again. There is no expensive installation necessary, no concrete foundation nor special wiring required. It is possible to charge batteries on five separate circuits with the Breco converter.

The Cornell Electrical Laboratories report said:

"Briefly, the Breco Converter is a graphite-arc valve which only permits current to flow in the right direction. This valve used in connection with a commutator, and a special electrical timer prevents all spark and permits the obtaining of proper commutation. A careful examination of the oscillograph records obtained, proves absolutely that no reverse current passes through this rectifier when it is adjusted for normal operation."

The Breco desulphator is declared by its maker to be superior to any other device for breaking down sulphation and restoring the life of a battery. It is entirely automatic and restores the battery without any danger of excessive heating.



The Breco Desulphator.

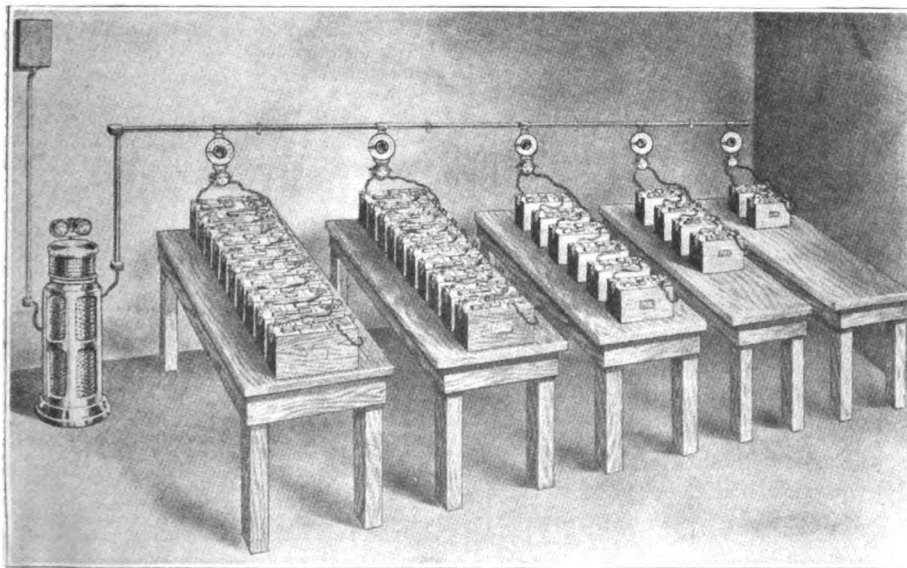
It has been the makers' experience that a battery connected straight across 110 volts for 40 hours without results, was broken down, with the Breco desulphator in 30 minutes, so that it would take a charge. It can also be used for charging batteries and has a capacity of 30 cells in series. It is a good device for service station and garage use, as so many batteries brought in are in a badly sulphated condition.

The Horn Versus the Bell.

"Who has not complained against the obnoxious, unmusical squawk of a horn and wondered why some other form of signal more attractive to the ear, yet just as effective, could not be utilized instead," asks a prominent dealer. The Cathedral Bell Mfg. Co., Baltimore, Md., answers the question by providing a bell with musical tones, which warns the pedestrian against the on-coming car, and yet does not antagonize him with an unearthly, doleful squawk.

The Cathedral bell is very simple in construction, and is made of spun brass, set with an imported polished ruby jewel. Inside is the single coil of enamel wire, absolutely water proof, which actuates the clapper through platinum, silver and alloy. Electrically this bell is bound for a six-volt circuit, unless otherwise ordered.

The prices of the bell range from \$5.75 to \$10.75, according to size and description. It is one of the new merchandise features of the up-to-date stock of accessories, and in quick demand by refined people whose personality represents gentleness and courtesy rather than abruptness and command. Why not write for a dealer proposition?



Breco Rectifier Charging Five Sets of Batteries.



Keep Track of Tire Buyers Through Dated Card System

Dealers in tires, whether garagemen, car agents or accessory store keepers, overlook their best interests when they sell a tire and then forget about it. A simple card system to keep track of tire sales will repay tire dealers many fold.

When a casing is sold, the name of the buyer, provided he lives anywhere within selling distance of the seller's place of business, should be put on a dated card, so that it would automatically come out of the file a month or so before the tire dealer estimates that the casing will have worn out.

For that matter, when a tire is sold it is a comparatively simple matter for a keen observer to note the condition of the tires on each wheel of a customer's car, so that he may figure that the buyer will need three other shoes at, say, intervals of two, three and five months. A short letter can be sent to the customer at about these times, and it is certain that enough sales will result to make the plan pay handsome dividends on the labor and expense involved in carrying it out.

Tire Service Stations.

The unprecedented congestion of traffic on our railroads has been the ill wind that blew the motor truck industry good. Scarcely a field of merchandizing endeavor exists which has not been invaded by the rubber-tired freighter. Hundreds of manufacturers and wholesalers who formerly had no choice but to wait on the railroads to deliver shipments to their customers have found relief in the utilization of motor trucks. And thousands of retailers after thorough trials, have found truck deliveries more economical and more satisfactory in many other respects than the old-time horse-drawn method.

At the present time upwards of 375 manufacturers are engaged in the production of commercial vehicles. And all of these must necessarily have rubber tires to protect their mechanism and their loads from shock and vibration. A majority of them are of the slower moving type, operating on solid tires, as against the speedier machines which usually are mounted on pneumatics.

So that throughout the country there has sprung up the necessity of proper tire service for the owners of these trucks. The tire companies are successfully working this out on the same basis that has so efficiently and economically served the wants of users of standard pneumatic tires. This is the Service Station idea. So these stations have been established, and are being added to in number daily.

R. S. Wilson, truck department manager of one of the companies, in commenting upon the service station policy, outlines the different elements that compose service on solid truck tires. Says Mr. Wilson: "These service stations render a distinct service in applying pressed-on tires—the most widely used solid tire at present—to the rims, and save the truck owner the delays that would arise from the necessity of sending his wheel to the factory or some branch city for tire application.

"Then there is the alignment problem to take care of. It is conservative to say that fully one-third of all the motor trucks in operation have one or more wheels out of alignment. And you know what that means for the tire. The diagonal grind which the tire must undergo soon wears it down. The service station man soon rectifies this condition.

"Service station men are often able to save many miles to a tire by trimming off bad cuts that have been caused by overloading, speeding, etc. A cut once started follows the grain of the rubber and constant use causes it to penetrate deep into the tire. If caught and trimmed off in time many miles and dollars can be saved.

"Another service that these men supply is the recommendation of the proper type of tire for any particular service. There is a tire for every service, and service men recommend that particular type that will best serve the truck owner.

"The results of this policy of looking after the truck owner's tires have been surprising—to both the truck owner and tire companies—which means that eventually there will be a service station wherever there are trucks to be served."

Changes in Goodyear Personnel.

The Goodyear Tire & Rubber Co., Akron, Ohio, announce the following appointments, now in effect:

Mr. C. W. Martin, Jr., takes charge of the Southern District, with headquarters at Atlanta, Ga., after serving five years as manager of the Motor Truck Tire Dept.

Mr. R. S. Wilson, who has been in charge of the Service Department, has assumed the duties of manager of the Motor Truck Tire Department.

Mr. G. E. Brunner, who has been assistant to Mr. Wilson in the Service Department, has been advanced to the position of manager of the department.

Mr. W. R. Bliss, formerly manager of the company's Boston Branch, is now manager of the New York District.

Mr. D. M. Colwell, who has been manager of the Southern District, becomes assistant manager of the New York District.

Mr. B. S. Waterman, assistant manager of the New England district, assumes the management of the Boston Branch, and will continue to look after the company's manufacturers' business in the New England District.

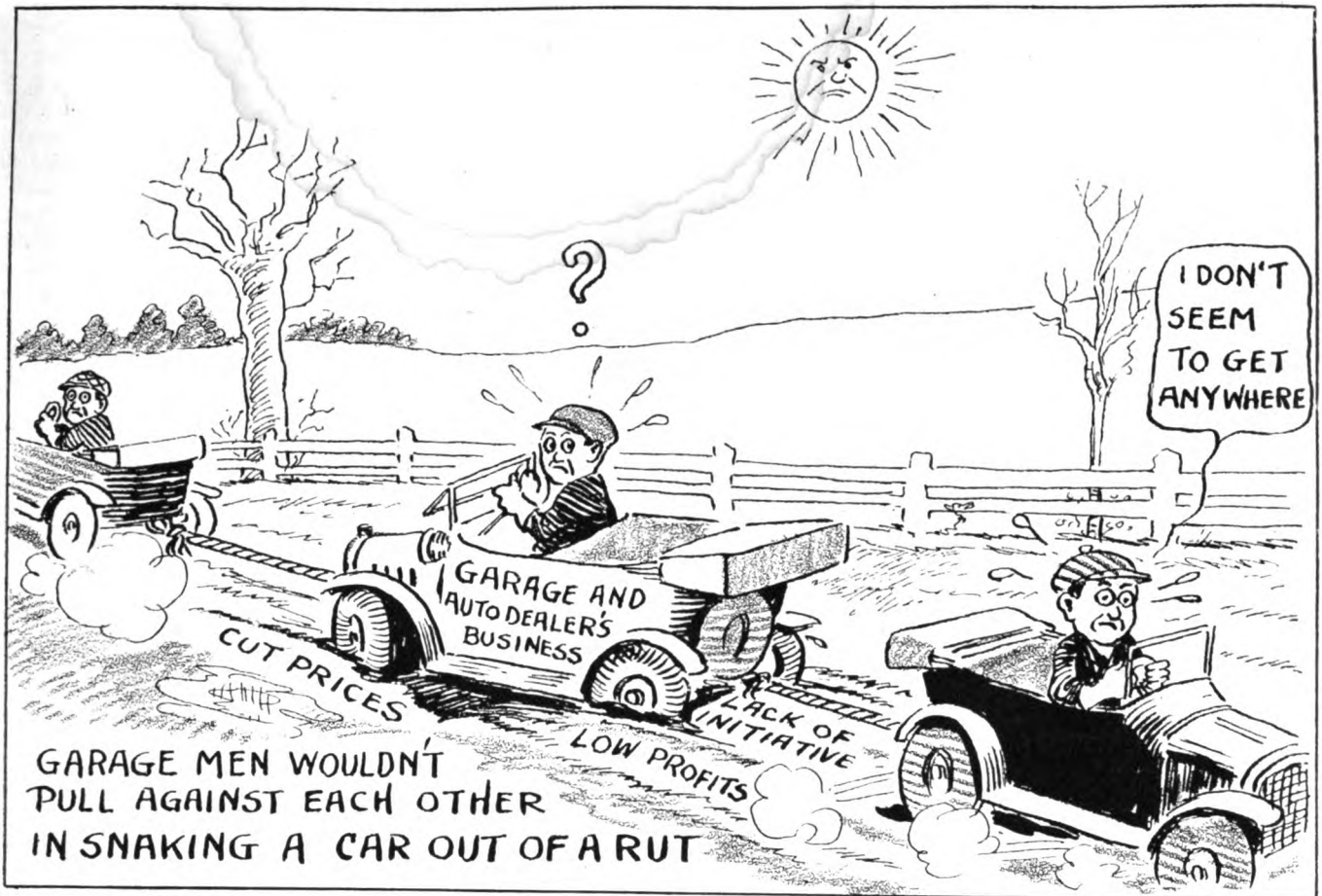
FIRESTONE ADOPTS NEW WHEEL SALES POLICY.

A new policy in the sale of demountable rims and wheels for Ford cars has been adopted by the Firestone Tire & Rubber Company, of Akron, Ohio. Formerly these sales have been made, through Firestone branches, to both jobbers and retail dealers. Under the new plan the Firestone Company's sales force will still push the sales of wheels equipped with Firestone demountable rims, but their orders will be turned over direct to the jobbers.

"From reports we have already received, we believe that this new plan will be extremely successful," comments A. G. Partridge, general sales manager of the Firestone Company.

The Hanes automobile tire, recently put on the market by the Hanes Rubber Company of Winston-Salem, N. C., made its debut on a racing machine at the Virginia State Fair last fall, and after being driven in every event on the two-day program, did not show the slightest flaw, we are informed. Russ Hays, a well known Southern race driver, equipped his Buick with Hanes tires and entered the races. He gives a remarkable testimonial as to their wearing qualities and appearance after the grueling test to which they were subjected. He drove the car for a total distance of 135 miles in the various speed events without tire change, and despite the terrific strain encountered while flying at top speed around high-banked curves and on long straightaways they were said to look almost as good at the finish as at the beginning.

Yes, Why Not Co-operate?



How to Make the Shop Pay

Plan is Devised to Store Oil Over Entrance to Save Time in Service and Waste

By E. B. Hinrichsen.

(Continued from January.)

The gasoline and oils had always been handled by whoever happened to be around when any one was wanted. The gasoline tank was an underground one and there were two filling stations. One was located at the curb in front of the building. The other was in the garage itself. After watching operations for a few days, Mr. Brown had the inside station closed. One man could not attend to both and the outside one did ninety per cent of the business.

The oils and greases were in a corner at the rear of the shop. The oils were in fifty gallon tanks with no provision for saving the spilled oil. The floor under the faucets was a mess of dirt and oil. When a tank was empty, it was filled by taking a barrel of oil from the store rooms, rolling it close to the tank and transferring the oil in buckets. No measurements were taken to see whether or not the barrel was full. The oil was just transferred in a careless way. Mr. Brown watched several barrels emptied at different times.

It took three men to do the work. One drew the oil from the wood barrel, another took the bucket and handed it to the third, who stood on a ladder and poured the oil into the tank. It took fifty minutes to empty the barrel and Bill afterward told Mr. Brown that he estimated that at least two gallons out of fifty were spilled.

Mr. Brown mechanically kept count of the number of buckets that were filled and emptied. Suddenly he called a halt and measured the amount the bucket held. A moment's calculation showed him that there was apparently only about forty gallons in the last fifty gallon barrel. He was puzzled. It was possible that there was a shortage at the shipping point or some lost in transit but it was not probable. It could only be explained in one way and that was by leakage. He went to the store room and examined the floor. It was wet with oil and there were even pools of oil in places.

Dislike Wood Barrels.

Here was a problem that bothered him. He thought of larger tanks and no oil in storage in wood barrels. It also occurred to him that a runway might be made to raise the barrels above the tanks and do away with the bucket brigade but this was not enough. The tanks were so located that, if a car on the street was to be filled, it was necessary for the man to walk to the rear of the shop, fill the measure and then walk back to the street. It would be

better to locate the tanks at the front but room was too valuable there. He gave it up until he could talk it over with Bill.

That night he and Bill had their regular after supper smoke and talk.

"Bill," he said, "I have hit the worst problem yet and I thought it would be the easiest. I mean the gasoline and oil. I have thought of having one man to handle this but as things are now arranged it won't work. The oil should be in the front end near the door, but we need that room. Then there is the waste and dripping to be considered."

He then told Bill in detail what he had seen of the way the oil was handled.

"Well, 'Efficiency,' grinned Bill, "here is something I thought of before you ever came on the job. I worked out a scheme that looked good to me, but the 'Old Man' would not listen. He was too busy selling cars. See what you think of it."

"The oil has always been bought by the office. They try to buy a good grade but go only by price. They only know about three kinds of oil—light, medium, and heavy. Now, there are oils and oils. One oil is the best lubricant but the greatest carbon producer. Another is better from the carbon standpoint but won't lubricate as it should under heavy work."

Fords Good Testers.

"Some types of engines can use a carbon producing oil and get away with it. Others can't. Don't forget, too, that an oil may be good one year and bad the next. I don't know why this is, but it's so. An old worn Ford car is the best device to test oil that I know of. That old rattletrap in which I drive to and from work has made most of my tests for me. Just now it is using a certain make of oil. Last year the same oil would foul the engine in five miles. That's the way it goes."

"If I was buying the oil, I'd know what I was getting. Of course there are certain well advertised brands that you have to carry but you'd be surprised to know how many drivers just ask for oil."

"As to arranging the tanks, I can show you better than I can tell you."

This was Bill's scheme, and it was adopted:

Above the garage was a loft or room that was used for storing new cars and those which were classed as "dead storage." This room was not heated. Directly above the front entrance of the shop, they partitioned off a room large enough to hold the tanks they decided to use. These tanks varied in size but each was designed

to hold thirty days' supply of oil of the kind it was intended to contain. The shop was heated by steam and they installed a radiator in this room in order that the oil should be kept in fluid condition at all times.

A separate pipe was run from each tank to the floor below and these pipes terminated at faucets located just inside the front entrance. A screened, hollow-top table was located underneath the faucets for the oil measures to stand on while they were being filled. This table had as many compartments as there were faucets and was designed to catch the spilled oil. Pipes ran from the bottoms of each compartment and a five gallon can was placed at the outlet of each pipe. Any oil that was spilled would run into its proper can and this can could be carried upstairs every week or so and the oil poured into its proper tank.

Oil Piped Upstairs.

The method of transferring the oil from the wood barrels in which it was shipped was very ingenious.

A pipe was run from a point above the tanks down to the ground floor. This pipe was fitted with a swinging spout at the tank end, so arranged that oil could be directed into any one tank. A short piece of heavy hose was attached to the ground floor end. The other end of this hose was fitted to a tapered piece of pipe of the proper size to be driven into the bunghole of a barrel. Bill made an air valve of an old tire valve stem and the device was complete.

A barrel of oil would be rolled in position, the bung removed and the taper pipe driven into the bunghole. The barrel would then be turned until the bunghole was at the bottom. A trench was cut in the floor to take care of the taper pipe and hose when the barrel was in this position. A hole was bored in that part of the barrel now at the top and the old tire stem screwed in. The compressed air tank would do the rest. It was only necessary to screw on an air hose and open a valve. The oil would be raised and run into the tank as fast as the pipe could carry it. The barrels would creak and groan under the strain until Mr. Brown thought they must burst but Bill assured him that the compressor could not raise a sufficient pressure to burst one. He had tried it to see.

With this device, the gasoline and oil man could empty a barrel alone and there was no more oil stored in wood barrels.

D. C. Hughes & Company have moved into their new factory addition at 4642-44 Ravenwood Ave., Chicago, which has three times the capacity of their old plant. Four and one-half years ago Mr. Hughes started business in a garage 12x15 feet. He states that there are more than 150 patents of his in the Patent Office at Washington. The Elektro line includes percolators, toasters, flat irons, disc stoves, toy ranges, as well as automobile engine heaters.

Some Good Merchandising Hints

“YOUR store window,” as someone has aptly written, “is the theater of your place of business. The passing public—numbered by the thousands every day—composes your audience. The items of merchandise which you display in your window are your actors.” In what other way can you attract attention to your store and to the merchandise you have for sale at such small expense as with some effective display that will attract and hold the attention of the passing throng?

WHAT other form of advertising can you use that is so quick and unerring in its results, as the display which interests people in the very goods you have for sale in your store? And what better way is there to hook up your store with the goods that are advertised at large expense by the manufacturer in the trade journals and national magazines, than through your windows—thus getting, at trivial expense, the benefit of the educational and constructive work these large advertisers are doing?

YOU know from your own experience that frequently the name of a product which is stored away and lying dormant in your mind, or a want which has been half forgotten, is fanned into a sudden desire and an impulse to buy, by seeing the goods in an attractive window display. Good window displays need not be elaborate. Indeed the strength of the window with a few articles tastefully arranged, often surpasses that in which too wide a variety of merchandise is piled in a confusing profusion. It will pay every dealer to make a study of and give especial attention to the displaying of goods in the windows. Every time you see the picture of a window, study the windows of your home merchants. Study the windows when you make a business trip to other places.

AMERICAN people are “strong” for “variety,” and the merchant who learns to appreciate the fact is learning something that will put money into his bank account. One of the best methods of meeting competition is to follow out the **VARIETY IDEA BY CHANGING YOUR WINDOW DISPLAYS OFTEN.** This gives your business an air of progressiveness and liveliness. Keep this up. It will be well to use as much originality as possible.

ONE should try to carry out a definite schedule, changing the windows “every so often.” It means lots of work, but persistence pays. No degree of success in window display advertising can be accomplished without “constantly keeping at it.” If you are anxious to put in an accessory display, just stop what you are doing, and go ahead with one.

In the Service of Our Country.

Lucius French, former advertising manager of the National Motor Car and Vehicle Corporation, has become a first lieutenant in the Motor Equipment Section of the U. S. Army Ordnance Department. This department is headed by Major William Guy Wall, who was chief engineer and vice-president of the National concern until this country entered the war. Lieutenant French is represented by the 112th star in the service flag at the National factory in Indianapolis.

Charles C. Goodrich, director of The B. F. Goodrich Rubber Company, and son of its founder, Dr. Benjamin F. Goodrich, is following in the footsteps of his brother, David

M. Goodrich. He has received a commission from the War Department in the ordnance branch of the service. Dave Goodrich, also a director of the rubber corporation, is a major of infantry.

Employees of the Chicago office of the Hyatt Roller Bearing Company assembled at a dinner recently to honor two of their members who have recently joined the colors. J. E. Martin is already in service, being connected with the Mobile Ordnance Corps and located at Clintonville, Wis., and T. A. Russell, the other, has joined the Aviation Corps and is now at the Aviation School at Ithaca, N. Y. C. M. Eason, manager of the tractor bearings division of the Hyatt Company,

It may be a very simple display, but don't let that stop you. If it is even nothing but a well lettered card in the window with the words “Automobile Accessories” on it and some spotlights, tires and patches around it, there will be some advantage to it.

PERSONAL letters have a prominent place in the business plans of Harry M. Johnson, sales manager of the Pendleton Cadillac Automobile Company of Pendleton, Ore. He relies on letters to interest people in the Smith form-a-truck attachment and finds the attention he pays to these communications brings good returns in business.

PART of one of his letters, which he signs “Yours for Cheaper Hauling,” reads as follows:

“THIS letter tells you about the Smith Form-a-Truck Attachment and is of vital interest to you.

“SOMETIMES when we tell people what the Smith Form-a-Truck Attachment applied to their Ford, Chevrolet or Maxwell car will do in actual performance as a guaranteed 1½-ton motor truck, we know that they are often rather skeptical of our statements until they have seen for themselves what it will do. Even then, they often remind us of the proverbial backwoodsman, who, on his first visit to a menagerie, stood gazing in open-eyed wonder at the giraffe and finally turning away he was heard to mutter: ‘No, sirc, they ain't no sech animal!’

“DO YOU know that we can convert your old car into a guaranteed 1½-ton truck that will actually haul 3,000 pounds any place you want to go? Do you know that you can go into the grain field and haul your wheat quicker and cheaper than with horses? Do you know that your car equipped with a Smith Form-a-Truck Attachment will enable you to do the same general hauling as you now do with four horses? And at less actual expense? And do you know that such a truck will do the same work at less than half the cost of a new truck?

“NO DOUBT, you will be rather skeptical when you read this, but all we ask is an opportunity to prove our statements. We can easily show you that the Smith Form-a-Truck Attachment on your car will easily do all these things—and more, too. We feel certain we can prove to you that it will become indispensable for your business, and the best investment you ever made.

“CALL and see us, or else write or phone for a demonstration now. We will be glad to prove to you that we can back all the above statements.”

stated he felt that his company had suffered a genuine wartime sacrifice in losing these two men who had given splendid service to their firm.

The Mason Tire and Rubber Company, Kent, Ohio, has lost the following employees to its country's service, the men joining various branches of the army and navy forces:

Frank Masden, Herbert Wright, Reese Harris, Walter Meyers, Leon Grabill, Lawrence Boyd, Howard Price, Edward Dyers, Dudley Smith, Frank McCray, Robert H. Hawley, Clell Cannon, Harold Boak, Ivan Shanafelt, Lee O. Miller, F. E. Colbourn and Wesley J. Wilson.

Welding, Cutting and Brazing

Proper Time to Start Welding Aluminum

By David Baxter.

Question:—We beginners at the welders' craft are continuously being warned against preheating aluminum castings too much. That is, we are told not to get the job too hot or it will crumble, cheese or sag. Then, on the other hand, we are warned to bring the preheating temperature high enough; if the job is not hot enough it will break or crack back. Now I would like to know what is the happy medium, and how to recognize it? Can you give some simple way of telling when a job is right for starting to weld? Will be much obliged for a mechanical "kink" or so along this line.—Hugh G., Kansas.

Answer:—With the seasoned torch operator this is much a matter of instinct; his inner judgment tells him when the job is ready. This degree of expertness should be the aim of all of us, and it is easily acquired by alert practice. I will endeavor to give several simple tests, one of which may suit your temperament.

The first, and perhaps the best, is by appearance; learn to know by "the looks of the thing." Clean, cold aluminum has a bright, polished appearance—a sort of reflecting, satiny surface. Watch this surface as the job heats; as the heat increases, the bright look disappears and changes to a dull, ashen effect. The metal no longer seems hard and firm, but rather soft and leaden. Now is the time to apply the welding flame, after controlling the preheating device so it will not get hotter. Even then apply the torch slowly until you are certain you know the trick.

Another simple test is by ear; learn the sound of aluminum. If you strike cold aluminum with a light hammer, or other metal tool, it sends forth a sharp click or clear metallic ring. When hot enough to commence welding, there is no resonance; the sound is much like that of lead or wood. Tap the heating casting occasionally and note the changing sound, from the metallic to the flat, dead sound. At first your judgment may be at fault, but with practice you can soon get to know the correct sound.

Yet another method employed by some operators is to watch the smoke arising from the preheating casting. Aluminum castings, such as broken crank cases, housings, etc., are more or less greasy from contact with oils. This oil seems to soak, as it were, into the very heart of the metal; no amount of scrubbing will remove all of it. Now, when the job starts heating, this oil boils out and burns. Watch

the job as it heats, and when the oil is all burned out and the smoke stops, you are fairly safe to weld the piece. Be careful, however, not to confuse the oil smoke with other smokes of the preheating fire.

A fourth test is by scraping the heating surface with the sharp edge of a file or other instrument. Cold aluminum will cut or scrape quite easily at all times, but when it is near the melting point it requires scarcely more than the weight of a file's pressure to peel a piece out of the surface. Try scraping cold aluminum a few times to get accustomed to it; then scrape the surface after it is hot and note the difference. With but little experience it is quite easy to judge the proper preheating temperature in this way. One of the foregoing tests should prove available to all torch operators.

A hint or so on carrying the preheating too far may not come amiss in this instance: If the preheating is carried too far, small beads or globules appear upon the surface of the metal. This is sometimes called "sweating." These beads have a white silvery appearance and are in reality melted aluminum. This sweating is a dangerous stage in the preheating process, for soon the metal will crumble and fall back into the fire. The remedy is to allow the fire to die and cool the job. Start over again, applying some of the tests given above.

* * *

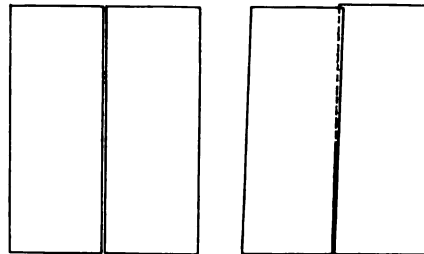
Regulating "Spread" in Sheet Metal Welding

Question: I have a job of welding some sheet metal floors for automobile trucks. They must be smooth and water tight. I am having poor luck as the sheets persist in warping or overlapping. Can you give a way to prevent this? I have tried spreading the sheets apart at one end, but some of them lap in spite of me. There must be some way to estimate and regulate the spreading and lapping. What do you consider the correct amount to spread the sheets, and how do you estimate it?—Dan G., S. D.

Answer: The most satisfactory way of preventing sheets of metal from overlapping while welding is by spreading the sheets apart at one end. As you state you have tried this method without good success, it is evident that the sheets were not spread enough, or were not welded properly. As you have not given full particulars, your questions may best be answered by instructions and sketches on welding two sheets of metal four feet long by two feet wide.

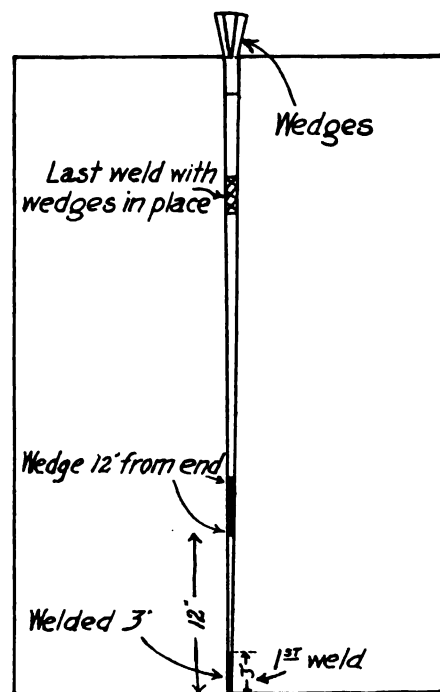
The sheets should be placed flat on a leveling plate, over a groove or slot if

possible. Pull them apart at one end of the line of welding. Do not place the sheets parallel. And do not have either ends touch. Estimate the spread of the close end by the thickness of the metal; this is for thinner metals that do not need chamfering. Say our sheets are one-eighth of an inch thick; then place them one-eighth of an inch apart at the close end. Now the other ends should be spread from one-eighth to one-fourth of an inch for



each foot of the length of the weld. In this instance, say we spread them one-fourth per foot or a space one inch altogether. If the operator is a rapid welder, one-eighth is enough, but if he is slow the spread should be one-fourth of an inch per foot of length of sheet. Whether the welder is fast or slow, the idea is to regulate the speed of the welding according as how fast the ends draw together, rather than to try to regulate the drawing together by the rapidity of the welding.

The drawing may be regulated by the simple device of placing a blunt wedge between the two sheets as shown in the sketch. Have a wedge made the proper angle to fit the angle of the spread, a foot



from the close ends. Also have several thinner wedges made to take up any change of angles as the welding proceeds. When starting to weld place the wedge between the sheets so the thinner edge is twelve inches from the close ends of the sheets. Now weld three inches of the seam and then move the wedge back three inches. Weld another three inches and move the wedge back again three inches. Repeat this procedure the full length of the seam. The last time the wedge is moved it will leave a foot or less to weld without wedging. This is true of sheets even in length. All things being equal the ends should come together evenly.

If, during the welding, the ends seem to be closing too slowly, it is only necessary to lift the flame a few minutes and allow the weld to cool faster. This causes the contraction to act more rapidly with a resultant faster closing of the spread. As soon as it seems to be acting properly the welding may again proceed. Raise the torch several times if necessary. If the opposite seems to be true, regulate the wedging to meet this condition. The figures given are not arbitrary but depend a great deal upon the facility and skill of the welder.

Table of Metals,

Fillers and Fluxes

Question: Will you please tell, through the magazine, what are the best filler rods, and also the best flux to use on different metals?—J. Mac., Portland, Ore.

Answer: Following is a table of metal fillers and flux, which in our judgment is correct—these combinations are being employed with good success by many welding shops throughout the country. While it is permissible to use other fillers, in some cases, it will be found that those given will be satisfactory for the average shop. Buy filler rods from an established manufacturer and keep them in racks that are labeled with the name and quality of each filler. If this is done there is no danger of spoiling a weld by choosing the wrong filler. Some of the different filler metals resemble others so much in outward appearance that it is sometimes difficult to tell which is the one wanted. And do not throw away the short pieces; weld them together and use all of each rod.

METALS.	FILLER.	FLUX.
Gray or cast iron.....	Cast iron.....	Borax or soda ash
Cast steels....	Norway iron....	None
Wrought irons.	Norway iron....	None
Mild steels....	Norway iron....	None
Aluminum cast	Aluminum.....	Special*
Copper alloys..	Copper, bronze, brass.....	Borax
Special steels..	Nickel, vanadium, etc.....	Borax
Zinc.....	Zinc.....	None

Malleable.....	Norway wrapped with copper wire.....	Borax
Tin.....	Tin.....	None
Lead.....	Lead.....	None
Copper.....	Copper.....	Borax

*Flux for aluminum given below.

Some Flux Recipes

Question: Please give, through the columns of the paper, a good flux for aluminum. Also one for cast iron.—A. J. G., Mo.

Answer: Recipe for aluminum flux:

Chloride of sodium.....	30 parts
Chloride of potassium....	40 parts
Chloride of lithium.....	15 parts
Bisulphate of sodium.....	3 parts
Fluoride of potassium.....	7 parts

Recipe for cast-iron flux:

Borax	5 parts
Soda ash.....	2 parts
Chloride potassium.....	1 part

Mix either formula thoroughly before applying to the weld. The handiest way to use them is by dipping the melted filler rod in the flux at frequent intervals throughout the welding. Keep each flux separate in small metal pots on the welding table or preheating bench.

Metal Thickness Table

Question: Is there a rule to go by in choosing tips, or nozzles, for the different thicknesses of metals to be welded? Also, will a certain size tip do for all kinds of metal of the same thickness?—A. A., Cal.

Answer: There is no fixed rule for this purpose, because most of the torches and tips of the different manufacturers vary slightly as to size number. The table given here, however, should serve as a fairly accurate guide.

In answer to the second question: The same size tip is not intended for the same thickness of all metals. It may be used successfully, however, if the flame is adjusted correctly and handled properly. It is better practice to use the proper tip for the kind and thickness of metal to be welded. A smaller tip is used for metals of lower melting point, for the reason that the larger sized tips supply more heat than is needed. Tin, lead and zinc have a very low melting point and therefore require a smaller tip than aluminum, which also has a low melting point, a little higher than the other three. Copper and its alloys have higher melting points than aluminum, therefore require a larger tip. Cast and wrought irons come next in requiring a greater heat. Cast, mild and special steels require the largest tips, according to metal thickness.

It might be well to state here, for the benefit of beginners, that any one size tip has a capacity for three grades of heat: The excess acetylene flame, which is the

lowest; the neutral or standard working flame, which is medium hot, and the excess oxygen flame, which is the hottest. The excess in either case should be very slight, else we endanger the metal to carbonizing or to oxidizing.

Condensed Table for Judging Tip and Thickness.

Tip Number.	Metal Thickness.
2.....	1/32 inch
3.....	3/64 inch
4.....	3/32 inch
5.....	1/8 inch
6.....	3/16 inch
7.....	1/4 inch
8.....	3/8 inch
10.....	1/2 inch
12.....	5/8 inch
15.....	3/4 inch

Simplicity Wheel Company Has Larger Plant Space

In order to care for its rapidly increasing business the Simplicity Wheel Company, makers of demountable wheel outfits for Ford cars, has recently made a considerable addition to its manufacturing space at Grand Rapids. They are now located at the corner of Lewis Street and Ottawa Avenue, where they have much more room than formerly.

To celebrate the removal the company held a dinner for its sales force. At this time it was announced that the firm has recently equipped some Ford Ambulances that have been sent to France and other Simplicity outfits are being used by the army in this country. The officers of the company are: F. Z. Raymond, president; F. W. French, vice president; W. C. Everett, general manager; G. C. Clapperton, secretary and treasurer.

"ANTI-KNOCKING PLEDGE"

For the promotion of harmony and co-operation between tradesmen by which to improve trade conditions, upbuild the industry and better the service to our customers.

We pledge ourselves to our association to refrain from all forms of malicious "knocking" against any individual or business establishment; the men they employ or the work they do; the car or supplies they sell or the service they furnish.

We will make all of our firm members and employees parties to this agreement.

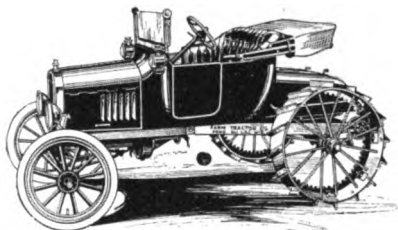
And, should we have a criticism or complaint to make against another member of our association, we will take up the matter with that member in person or turn it over to the secretary for adjustment by the "grievance committee."

Subscribed to by members of The Automobile Trades Association of Colorado.

Garagemen, Help the Farmer Farm.

Farm efficiency and economy is attracting the attention of the whole world at the present time. The farmer finds it difficult to secure necessary help to operate his farm and prices are such that he would like to cultivate every inch of it.

Now, here's his opportunity—and yours, Mr. Garageman.



The Twentieth century farm horse converts any Ford into a strong, durable tractor, and will do the work of four horses on any farm, and do it well. Any boy or woman who can drive a Ford car can easily operate the Twentieth Century farm tractor, single handed. See what this means to the farmer, his plowing, discing, harrowing, etc., becomes a pleasure instead of a worry.

Any Ford machine, when converted into a Twentieth Century farm horse, becomes a real piece of farm machinery—no make-shift—capable of doing just as good work as any standard tractor. Will pull two 12 or 14-inch bottom plows two to three miles an hour, plowing six to eight acres per day or night steadily.

We consider this the biggest chance the garageman and farmer ever had. This machine is manufactured by the Farm Tractor Company, Fond du Lac, Wis., sells at \$150, and will make enterprising garagemen and auto dealers a money-making agency.

Drives Two Trucks at Same Time.

It seems impossible for one man to drive two motor trucks at the same time. Yet that is what J. L. Saylor, general manager of the Columbia Motor Truck Company of Louisville, Ky., and his employees have been doing for some time.

Lack of labor and railroad transportation facilities affected Mr. Saylor's company simultaneously. He knew that he could overcome the transportation difficulty by having the trucks driven, but he was so short of mechanics he could not afford to take enough to Pontiac to drive as many trucks as he wished.

When Saylor got to the Columbia truck factory in Pontiac he had the front wheels of half the trucks he ordered taken off, and the fore part of the trucks attached to a Martin "fifth wheel" which was attached to the leading truck. Both could be driven by one man. Saylor got delivery on time, saved labor and expense and kept his service organization working smoothly.

BOE AUTOMATIC OIL PUMP IS EASILY OPERATED.

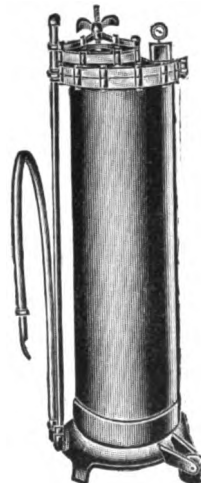
Ease of operation is a striking feature of the Boe automatic oil pump, produced by the H. M. Boe Company, 2416 University avenue, S. E., Minneapolis, Minn.

The oil pump dispenses and measures motor oil directly from an ordinary barrel by the operator opening a shut-off valve, thus making any barrel a portable self-measuring tank. An adjustable steel plate protects the barrel head and air pressure is applied through discharge pipe. Air need not be applied while using. It can be used for either lay down or upright style of barrel.



BOE GREASE GUN SHOOTS GREASE BY AIR.

The Boe automatic grease and oil gun "shoots grease by air," according to the maker, the H. M. Boe Company, 2416 University avenue, S. E., Minneapolis, Minn. It handles "fiber gear" or oil. The air is not applied while using, the gun being charged like an automobile tire. The entire cover can be opened almost instantly for refilling. The apparatus is used by many motor vehicle manufacturers, thousands of garagemen and the United States Government.



OPENS DOOR BY ELECTRICITY.

Accessory dealers ought to find a ready sale for the "Electromatic" door opening device made by the Allith-Prouty Company.

Danville, Illinois. It is so designed that a button is erected outside from which the door opening mechanism is controlled. When the owner comes along in his car during a rain storm he simply puts his hand out, pushes the button and the door is opened.

The regular light circuit will handle the work. The mechanism is controlled by two push buttons that may be placed where desired. Pressing the opening button turns on the lights, unlocks doors and throws them back clear of the opening. Pressing the closing button reverses the operation.

Unique Service Car Advertising.

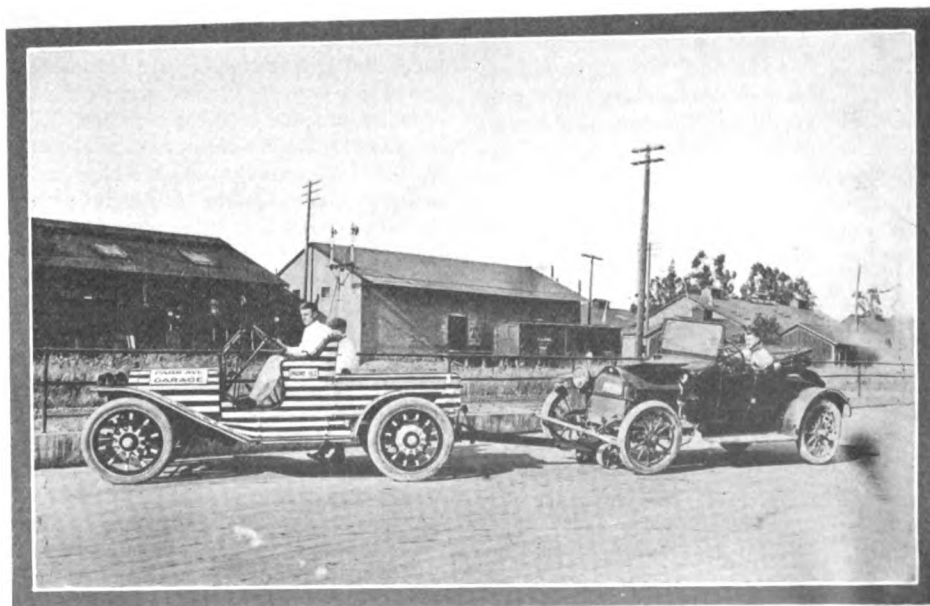
Jones & Kranz, proprietors of the Park Avenue Garage at Pomona, Calif., have conceived something decidedly unique in the way of outdoor advertising. They have an animated ad which goes from place to place and attracts much attention.

This advertisement is a service car which is painted black and white. The stripes run horizontally, and are of equal width. They make the vehicle look like a mechanical zebra, and when the car goes down the street most everyone notices it because of its unusual appearance.

The name of the Park Avenue Garage is painted on top of the hood, on both sides, and the telephone number of the garage is painted on each side of the seat base. The men who use the service car are clad in jumpers upon the front and back of which the name of the garage is lettered.

"We consider the striped service car one of the best advertisements that could be created for our business," said Mr. Jones recently. Whenever its stripes appear the people look to see who the car belongs to, and it makes such an impression on them to see us towing in a crippled vehicle that they do not soon forget that the Park Avenue Garage runs an ambulance to bring in disabled machines.

"After the people see the striped car go up and down the street a few times they instinctively think of us and send for us when they have car troubles."



Mechanical and Engineering Problems

Finishing Cylinders

Question: Please advise through the American Garage and Auto Dealer whether or not to your knowledge any automobile builders ever bore cylinders a few thousandths small and then lap to size, using emery or other abrasives.

There is some doubt in our minds as to whether or not it is possible to remove every particle of emery as it would seem just possible that some would remain in the pores of the iron to give trouble at a later date. Please give us your opinion on this point.

R— Garage, Georgia.

Answer: Nearly all engine makers grind their cylinders. This is not done with an abrasive mixed with oil or grease but by means of the regular grinding machines. These machines are equipped with a grinder made up something like an emery wheel. The composition of these grinders varies according to the use to which they are to be put, but I believe that most of them now are made of carborundum.

The cylinders are bored small and then ground out to size on the machines. In order to prevent too great expansion of the metal due to the heat developed, water is run through the water jackets during the operation. This also has a tendency to prevent particles of compound from being forced into the metal pores.

Pistons, crankshafts, cam shafts, wrist pins and, in fact, all bearing parts of the high grade engines are ground.

In replacing a damaged cylinder in a garage, it is often necessary to lap in the piston with an abrasive. To do this by hand it is necessary to mix the abrasive with oil. This makes a nasty mess and if not carefully cleaned out will cause trouble. I have done this lapping a good many times and have never had any trouble afterward but have seen a number of cases where the engine was ruined. I always thought, however, it was due to lack of care in cleaning afterward.

* * *

An Oiling Problem

Question: We have an oil problem or engine problem that we would like to hear from you about. Why is it that— will give good service in a 1913 Cadillac and will foul up a Chalmers of the same year? This same oil will work well in some Buick models and will foul others. It also works well in a Stoddard-Dayton but will not do in a Ford. Have you ever used it and what did you find out?

L. & K., Indiana.

Answer: You will find that "Bill" says in this month's installment of "How to

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

Make the Shop Pay" that there are oils and oils. I am familiar with the brand you mention and have learned what types of engines to use it in. This oil is one of the best lubricants on the market but under certain conditions is a great carbon producer. If you will look back over the oiling systems of the cars in which it was satisfactory, I think you will find that all of them were of the oil burning type. That is, the oil is fed to the splash pans from a tank in small quantities at a time and is not circulated. The oil is simply used up and burned away and a constant fresh supply is pumped in. In the case of the Stoddard-Dayton there is not even any splash pan.

The cars in which it was not satisfactory are of the oil circulating or "flood" type. In this case, the entire supply of oil is constantly being used and is only freshened when new oil is put in. I have found that it is better to use an oil of perhaps poorer lubricating qualities but more free from carbon in this type. There are many good oils on the market but I do not believe I ever found a universal one.

* * *

How to Use Graphite

Question: I have always heard that it is a good plan to use graphite in an engine but do not know how it is to be used. I have also heard that it would cause damage. I do not know which is right. I have a customer who came here from another town and he says his garage man always used it and thought it was the best thing in the world. Can you tell me whether or not it is good and how to use it?

J. L., Florida.

Answer: Graphite is good in the crankcase of an engine, especially if the cylinders are somewhat worn. It has a tendency to cling to metal surfaces and helps hold compression. It is also somewhat of a lubricant in itself. Use the powdered graphite. Mix about a teaspoonful to each gallon of oil. There are a number of concerns that put up a graphite especially for engine use. It would probably be better to use one of these and follow the directions furnished. Never put graphite of any kind in an engine that has a flywheel magneto or other electrical generating device contained inside the engine.

Is Transmission Needed?

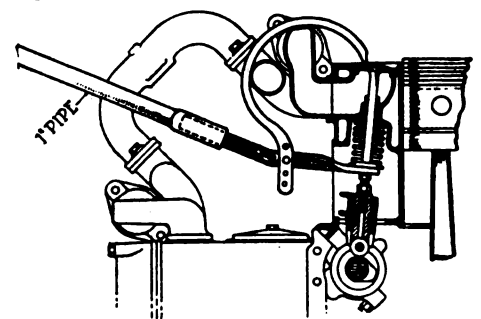
Question: Why would it not be possible to build a motor large enough to do away with the transmission gears? Could not such a motor be made to develop full power in starting and after you were going cut out part of the power, something like the half power of the Peerless? Would this not do away with lots of parts?

G. F., Michigan.

Answer: In the first place a gasoline engine develops little or no power at slow speeds and you would have a hard time starting car and engine together. A clutch might be used in order to start the engine and this clutch could be slipped in starting the car, very much as is done now when using the transmission. This would work well on level ground but to pull you out of the mud you would have to have a tremendously large engine. Even if the engine was large enough, I don't think your shafting would hold when you speeded it up and dropped in the clutch. Even the motorcycles are using transmissions these days. I am afraid your plan will not work.

Cole-8 Valve Tool.

A convenient and simple valve tool for removing the locking washers on an 8-cylinder Cole is shown in the accompanying sketch supplied by Colt-Stratton Co., New York.



It comprises a circular hook of about 7 in. radius with an opening of about 6 in. for insertion over the manifolds. This hook is made of $\frac{5}{8}$ round stock, and flatted and drilled at the lower end for adjustment of the lever arm. The lever is made of flat stock, notched for engaging the valve locking washer and provided with a pipe handle about 14 in. long. This handle must be bent in the manner shown so as not to strike the opposite cylinder manifold.

Big Increase in Mason Sales.

Sales of the Mason Tire & Rubber Company for the first quarter of the 1918 fiscal year show an increase of 700 per cent over the same quarter of 1917. January sales were the largest in the history of the company for any one month.

Nash Quad is Distinctive

Brakes and Steers on Four Wheels—the Mechanism Explained—Details of Parts Shown

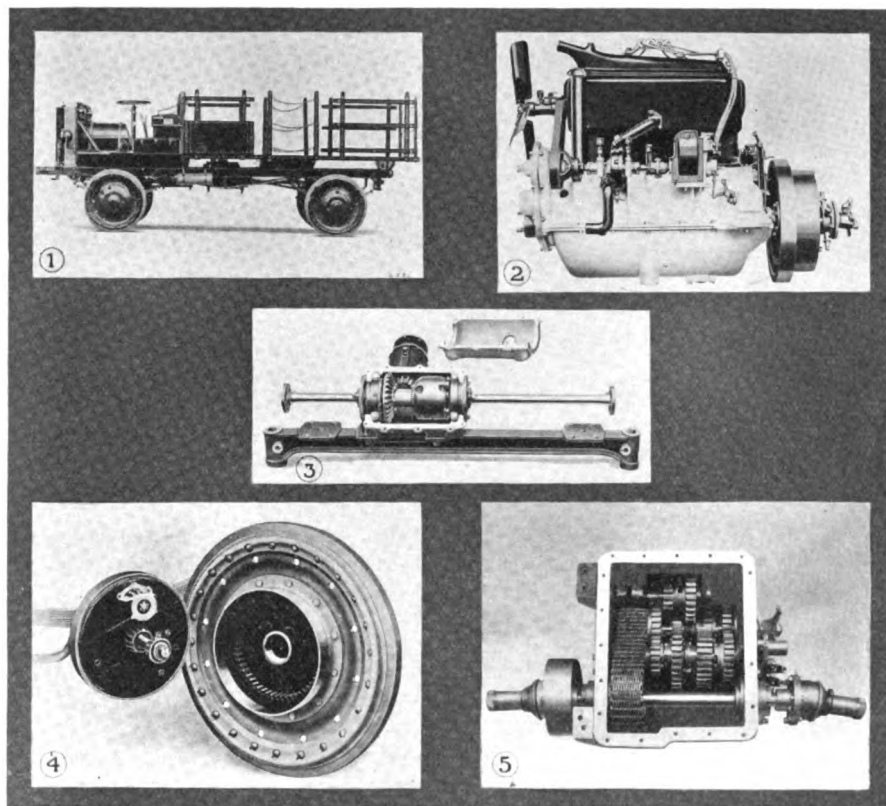
The Nash Motors Co. of Kenosha, Wis., gives some interesting details concerning the Nash Quad, the truck that drives, brakes and steers on all four wheels. Thousands of these sturdy vehicles are now in service and rendering good accounts of themselves

the entire weight on the wheels is converted into traction, within the capacity of the motor, and the power is always applied exactly where it will do the most good, both pulling and pushing.

For example, if one wheel of a rear-drive truck becomes mired, it will ro-

the road wheels of the vehicle can lag in speed behind the motor. The two outermost wheels can overrun the others in turning a corner, but as soon as any wheel tends to lag behind the motor, the differential automatically locks, and the driving shaft is virtually solid from wheel to wheel.

In this way if one wheel does not get traction and the other does, the latter immediately takes all the power



- 1—Nash Quad (Maximum Capacity, 4,000 pounds). Equipped as shown, \$3,250.
- 2—Left side power plant showing magneto and water pump.
- 3—Showing internal gear-drive; final drive as is used in each of the four wheels.
- 4—Showing axle assembly—front and rear alike. Large "I" beam drop forged axle. Small high speed drive shaft.

- 5—Transmission with cover removed. Shows constant mesh gears with dog-clutch engagement for speed changing. Note silent belt chain which transmits power to shaft which drives front and rear axles.

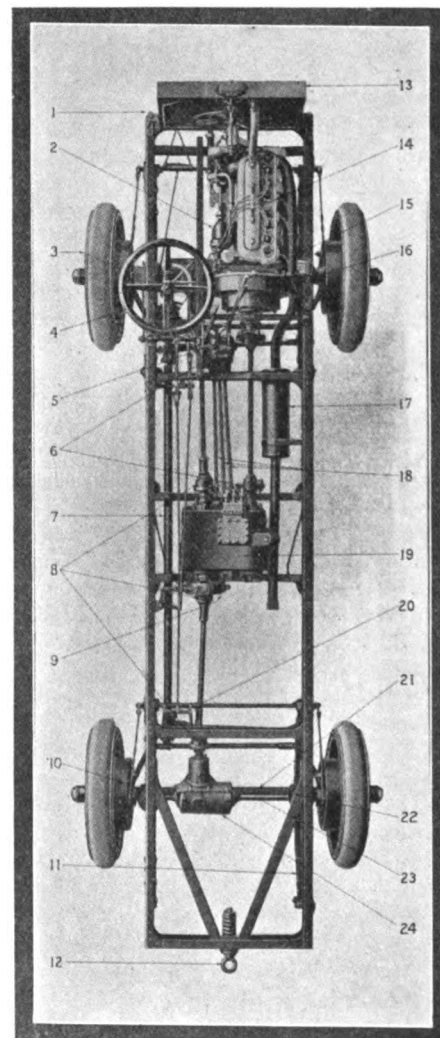
not only in pursuits of war, but in commercial channels as well.

With power applied on all four wheels the Nash Quad has been especially adapted to work under extreme difficulties. It climbs like a veritable mountain goat and has long since proved its ability to go anywhere a four-mule army team will go.

The advantage of this four-wheel-drive feature is that the front wheels of the truck continually climb over objects and are assisted in doing so by the extra traction afforded by the push of the rear wheels from behind. Thus

tate at double the normal speed of the vehicle, while the other driving wheel stops dead and gets no traction at all. In such a case the vehicle is stalled completely, and must either be towed, or the spinning wheel locked in some way to force the other wheel to transmit power and so pull the automobile out of the hole.

Not so, however, with the Nash Quad. It is provided with the M. & S. automatic locking differentials, one in the front driving shaft and the other in the rear driving shaft. The action of these differentials is such that none of



- 1—Spring suspension of radiator.
- 2—Magneto.
- 3—Steel wheels.
- 4—Steering gear.
- 5—Center control.
- 6—Flexible leather universal joints.
- 7—Steering tube, operating all four wheels.
- 8—Universal joints.
- 9—Transmission brake.
- 10—Brake drum, integral with steel wheel.
- 11—Spring made of special chrome-silicomanganese steel.
- 12—Spring-cushioned drawbar.
- 13—Radiator.
- 14—Nash motor.
- 15—Lever operating transmission brake and all four brakes in wheels.
- 16—Dry-disk clutch.

- 17—Muffler, with horizontal discharge.
- 18—Change-speed connecting tubes.
- 19—Transmission, four speeds forward and one reverse.
- 20—Brake equalizer.
- 21—Axle—drop-forged, heat-treated, vanadium steel.
- 22—Spring bumper.
- 23—Drive shaft—alloy steel, heat-treated.
- 24—Bevel gear and differential case.

that previously the two wheels would have shared, and as long as it can get traction it will pull the vehicle out of the mire. Indeed, as long as any one or more of the driving wheels can get traction when the others cannot, the Quad will continue to travel.

A silent chain transmits the power to the shaft, which runs right through the transmission case. At each end of this shaft is a universal joint which connects with a drive-shaft extending to the bevel pinion in the differential housing. One of these longitudinal drive-shafts connects with the differential on the front axle and the other with the differential on the rear axle, another universal joint being introduced near the differential in each case.

The axles of the Quad are of the regular solid I-beam type, and do not revolve, inasmuch as they are used only to support the weight of the machine. The differential housing is bolted securely on top of the dead axle, and the transverse drive-shafts emerging one from each end of each differential are used to drive the road wheels by means of internal gearing.

The four wheels of the Quad are exactly alike. The front and rear axles are exact counterparts. The four tires are identical and interchangeable. The drive shafts, fore and aft, are the same. The differentials are duplicates. The steering knuckles, front and rear, are the same, except that the knuckles are not quite the same on the wheels on the same axle.

Various bodies are built for the Nash Quad and hundreds of these trucks are now rendering efficient service for contractors, fruit growers, oil distributors, builders, draymen—in fact, wherever haulage, under adverse circumstances, is a problem, one is almost sure to find a Nash Quad on the job.

The first military truck-train to cross the Mexican border with supplies for General Pershing's troops was made up exclusively of Nash Quads.

How to Sell a Lens: Keep in Mind the Road Conditions That Have to Be Met.

When a car owner comes in to buy a pair of lenses different from those already on his car, he naturally assumes a "man from Missouri" attitude. He knows what his present lenses will do or will not do. Certain specific conditions have to be met. He knows what they are, and it is for the salesman to sell him.

Naturally he seeks a lens that will give him maximum road light. He wants am-

ple light that will not bring the dimmer signal from other motorists. Also he has due regard for fellow drivers and so wants a light that will not glare in their eyes. And above all he wants to be law-free, independent of the man in buttons at the crossing whose duty it is to enforce the headlight law.

Perhaps the man's headlights are lawful and he is getting along fairly well with them. Or perhaps they are not and he must make a change. In the one case he has something he is getting along fairly well with, and will have to be "shown" before he will change. In the other he *must* change, and so will take no chances with the lens he comes to buy, and so insists on being "shown" just the same.



A representative of the new Osgood lens, referring to this subject, said: "In selling the Osgood, Cravath Long-Distance type of lens, the salesman emphasizes the points of more light, no glare, courtesy, safety, and full compliance with every headlight ordinance. Ours is a 1-piece lens combining twelve selective prisms that direct all the light forward, outward and downward, giving 74% more light on the road as compared with light from a plain lens; 910% greater road light as compared with light from a ground lens, the equivalent of many dimming and diffusing devices."

It appears that the beam of light from this lens is waist-high—never in the eyes of other motorists or pedestrians. No light is thrown into the air; while the beam is fan-shaped—lighting the road to the side and illuminating the turns—a distinct advantage the motorist will appreciate.

To sum up, the salesman should always put himself in the place of the customer, anticipate the requirements from that angle, and sell on that basis. In lenses he is selling a certain definite service, a service that is to meet actual conditions. In the main, lenses are sold, not bought. And selling means knowing the conditions to be met as well as the lens that will meet them.

Anti-Fake Part Campaign Started by A-K Men.

"The sale of fake parts for automobile accessories has assumed disturbing proportions," says the Atwater Kent Mfg. Works, Philadelphia, in a general letter sent out to car manufacturers using A-K ignition. "Not only does the sale of such parts affect the sale of legitimate parts, but the class of material sold is of such an inferior and inaccurate nature as to seriously affect the function and reputation of the

most reliable goods. This is particularly true of such material as carburetors, gears, springs, battery parts, magneto parts and the parts of practically all ignition systems.

"From a careful investigation as to inaccuracy of manufacture, inferiority of material used and dissatisfaction with the functioning ability of these parts we are in a position to say that this condition has become a trade menace. In most cases the prices of fake parts are considerably less than the genuine, which seems to be the principal reason why they enjoy any sale whatever.

"Certain manufacturers consider the situation of such importance that they have advised their dealers that the substitution of fake parts for any of the standard accessories carried on their cars will be deemed sufficient reason for discontinuing dealer relationship.

"We would suggest that if you are in sympathy with us in an effort to clean up this situation that you write to the Automobile Chamber of Commerce, to Motor Accessory Manufacturers and The National Association of Automobile Accessory Jobbers, and also circularize your own dealers on this subject. We enclose you copies of letters that we have sent to automobile trade publications and also to Atwater Kent jobbers and official repair stations. We trust that you will lend us your vigorous assistance.

"We propose canvassing the entire automobile and accessory trade and invoking the aid of the editorial department of the trade papers in an effort to get the movement immediate consideration.

"A line from you advising us of your cooperation would be very greatly appreciated."

THE AMERICAN GARAGE & AUTO DEALER wishes the new movement all success and urges its readers to co-operate to that end. The fake and counterfeit must go. Only goods sold for what they are and on their own merits have any right to recognition among honest business men.

Old, Reliable Company Sells Efficient Gas Saver.

The Chicago Pneumatic Tool Co., of Chicago, are not only doing big things with their Little Giant Truck, but are now putting on the market the Duntley Gas Generator, which guarantees to save more than 50 per cent of the full cost of operating an automobile. It is said to eliminate carbon, smoke and odor, prolong the life of the motor and increase mileage and power while cutting down the fuel bill.

This generator is attached easily to an ordinary car, and produces a powerful gas from equal parts of kerosene and gasoline mixed in the tank. The carburetor measures and analyzes the fuel in the gas generator, while the function of the gas generator is to prevent raw fuel from entering and destroying the engine, as it prevents waste by forming a gas mixture.

The A. A. G. O. and its Activities

"Asleep Long Enough"

U. S. G. Logan, a garageman and auto dealer at DuBois, Pa., has just cast in his lot with our national organization and in a letter to National Headquarters says:

"The A. A. G. O. has been doing good work. I have heard a good deal about results accomplished for the craft through you. Have been asleep long enough and am glad to join you now."

* * *

At the Chicago Show

The dealers made a good showing in Chicago Automobile Show attendance. The callers at National Headquarters were numerous, coming from as far east as New York state, as far west as Colorado, and as far south as Tennessee and Texas.

A difference of opinion was expressed as to the merits of the exhibit as a whole. All agreed that up-to-dateness in design was everywhere present; there was the usual number of new accessories, particularly those dealing with fuel economy; but some stated that the high cost of materials had made itself evident in a noticeable cheapening of rather too many cars.

In other words, all of the dealers reporting at this office agreed that the show artistically was "the best ever," but that from a mechanical and engineering standpoint it could, and should, have been better—that is, registered a greater stability in material values and larger advances in engineering success.

* * *

Secretary Carr Resigns

Secretary C. M. Carr has resigned his position as chief administrative officer of the National Automobile Retail Trade Association (A. A. G. O.), the resignation to take effect February 15. Mr. Carr was recently elected president of the Planetary Non-Lubricant Roller Bearing Co. and states that he finds his new duties and responsibilities so arduous that he is unable to carry forward the secretarial work of the association as in the past.

Mr. Carr also states that the support given him by the garage and dealer trade has not been as whole-hearted and widespread as the conditions and the merits of the organization warranted.

"There is too much division among the retail and service men," says Mr. Carr. "They do not get together as they should. Petty jealousies have stood in the way of developing a really great national movement."

"The services instituted by the A. A. G. O. and the ardent and efficient championship of our cause by the AMERICAN GARAGE & AUTO DEALER as its official organ, gave

the garagemen and dealers the greatest opportunity of the age for the welding together of their power into a weapon of defensive and offensive warfare, of doing constructive, educational work of a high order, but they did not rise to the occasion."

Mr. Carr leaves his old work with the best of feeling towards everybody in and out of the organization, expresses himself as proud of the good things accomplished, and regrets only that greater support and practical encouragement were not forthcoming in order that the record of achievements might have been much greater.

A successor to Mr. Carr will probably be appointed by the executive members of the organization during the next two or three weeks.

* * *

Cheaper Gasolene

The passage of a law by Congress during the past month which will open all of the public oil lands to development under the leasing plan, except certain lands reserved for navy supplies, ought to be the means of stimulating field developments and increasing the oil and gasolene supply.

The provisions of the law guard against monopoly and follow the lines laid down in Congressman Ferris' bill, so ably outlined by him in the pages of the AMERICAN GARAGE & AUTO DEALER some months ago. This legislation has been championed by the A. A. G. O. from its birth, and the passage of the law is therefore hailed with satisfaction by our officers and members.

It is not probable that any immediate benefits in price will result, but they cannot be long deferred, because present high prices for crude oil make oil men eager to lease government land and develop this added and needed protection.

The bill was passed as a war measure, it having been hung up in the Senate for more than two years, the inference being that special interests were opposed to so liberal and fair a measure. But under the stress of war needs, the power of the special interests is being reduced to a cipher. Patriotism here, as in other instances, has won.

* * *

Attend State Meetings

Garagemen and dealers are losers who do not attend their state meetings. If the state association is weak there is all the more reason why you should attend the meeting and add your strength to that of your fellow craftsmen who are present. If it is strong, the counsel, advice and information you will receive in an interchange of views will be immensely valuable.

The Illinois Association held its annual meeting at the Congress Hotel during the Chicago Automobile Show. This association has been doing good work and is largely responsible for the new lien law passed by the last session of the legislature. Other measures needed for the best interests of garagemen can be enacted by united effort.

* * *

Philadelphia Work Makes Good Progress

W. J. Bubeck, a vice-president of the National Automobile Retail Trade Association (A. A. G. O.), writing from Philadelphia where he is taking an active part in the work of the Philadelphia local organization, says:


"We wish to thank the A. A. G. O. for the noble pioneer work it has done among the garagemen of the country. It has made the work here so much easier. We are convinced that all members of our craft will benefit if we work hand in hand until every garageman in the United States is united in one body."

Brother Bubeck states that the regular monthly meeting of the local association was held on the evening of January 9 in Mercury Hall. The attendance was large, considering the weather. "The Philadelphia Association is doing great work," said he. "We now have 110 members and expect to have from 300 to 500 by this time next year."

(Continued on page 42.)

A. A. G. O.
The National Automobile
Retail Trade Association

29 S. LA SALLE ST., CHICAGO
 Telephone Randolph 2051



OFFICERS 1917-18

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Employment	Mechanical	Legal	Sales
Account's	Cost Find'g	Purchasing	Information

AMERICAN GARAGE
AND AUTO DEALER
The Official A. A. G. O. Publication

Accessories and Garage Equipment

NEW PASCO WIRE WHEEL BRANCHES.

The National Wire Wheel Works, Geneva, N. Y., announces the opening of branch distributing and service stations at the following points, handled through the Bailey-Drake Co. as manufacturer's agents:

San Francisco, Cal.; Los Angeles, Cal.; Seattle, Wash.; Kansas City, Mo., and Minneapolis, Minn.

Through the rapidly increasing number of Pasco wire wheels users. Sales Manager H. E. Van Horn of this company states that in order to assure prompt deliveries and in order to render the usual Pasco service this step was found necessary. The newly established branches will handle all Pasco business west of the Mississippi River.

CORK INSERT BRAKE LINING FOR BIG CARS.

The cork insert principle which has proved so successful in transmission linings and fan belts for Fords has now been applied to brake linings for big cars. Cork insert brake lining is made of highest grade fabric, into which discs of cork are inserted. Cork has an exceptionally high coefficient of friction. Added to the excellent frictional qualities of the fabric, it makes cork insert lining exceedingly efficient.



Another decided advantage of cork insert brake lining is its imperviousness to oil and grease. It will not swell. The surface never becomes glazed over or slippery. As the high frictional qualities are never impaired, this lining does not grab, slip or squeak. It does its work quietly, positively, to the last mile of service.

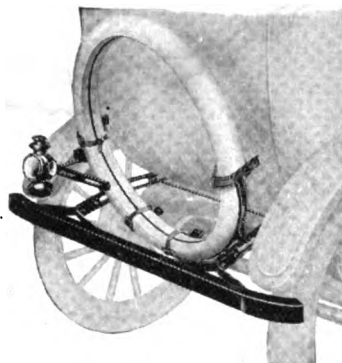
Cork insert brake linings have been thoroughly proved. A Chicago taxicab company has been testing them for over six months. The results of the test are summed up in a letter from the taxicab company which reads: "The service on a taxicab is very severe and we have been looking for a brake lining that would give the service that cork insert brake lining has given. We are satisfied that it is the best lining we have ever used."

Cork insert brake linings are manufactured by the Advance Automobile Accessories Corporation, 56 E. Randolph street, Chicago.

STEWART AUTOGUARD TIRE CARRIER FOR FORD CARS.

This model of Stewart autoguard is designed especially for Ford cars. It combines all of the good features of the regular model, but is furnished with special brackets which make it possible for dealers to install the autoguard on Ford cars in a short time.

There is no cutting of metal or drilling of holes necessary to make the installation. All difficulties of installation have been eliminated by the unique design of this model.



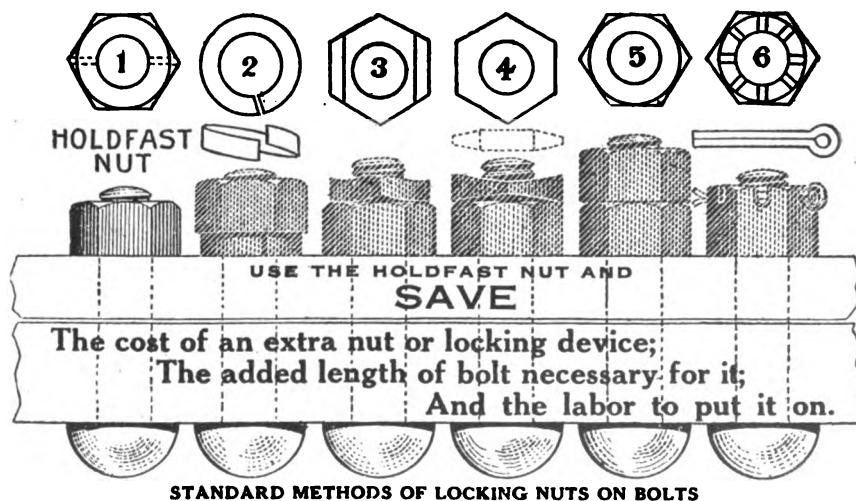
The Stewart autoguard carrier besides being an autoguard includes a tire carrier, tail lamp bracket and license plate bracket. The tire carrier will hold two tires. Four straps are provided. The brackets which hold the tires and to which the straps are secured have two slots. This permits the car owner to strap one or two tires securely in place.

The shock absorbing members consist of two full elliptic springs. This type of spring is found to be superior to the coil spring type. They have more than double the range of spring action and still have sufficient rigidity to resist effect and absorb heavy shocks. These springs, which fit in the channel of the autoguard bar, extend away over toward the ends of the bar. Most shocks resulting from collisions are received at the ends of the autoguard.

HOLD FAST NUTS ON THE MARKET.

"Hold Fast" nuts are declared to do away with the necessity of cotter pins and lock nuts. They are made by the Hold Fast Nut and Bolt Company, 134 South La Salle street, Chicago. Hold fast nuts are put on as quickly and conveniently as an ordinary nut.

They attach themselves to bolts as securely as the head of the bolt itself, making of the nut and bolt a single unit. They are complete in one piece and cannot be jarred off. Cannot be destroyed and cannot rust on.



STANDARD METHODS OF LOCKING NUTS ON BOLTS

RAYFIELD "STOVE" SAVES FUEL.

Much gasoline is needlessly wasted during the winter months because operators of motor vehicles persist in trying to run their machines with cold fuel. The kind of gasoline in use today must be heated in cold weather to obtain efficiency. Many devices are employed to get heat to the carburetor, but that of the Rayfield carburetor manufacturer has proven to be one of the best. A stove or housing is clamped around the exhaust pipe or manifold and is so constructed that the air passing through it is heated to a high degree of temperature. The heated air is then drawn through flexible tubing to the fixed air intake of the carburetor, and in the Rayfield it comes in direct contact with the gasoline at the nozzle opening, the result being instant action and perfect vaporization.

THE AMBU BATTERY PLATE PRESS.

Every battery repair shop must have some means of pressing plates, especially the negative plates. In "pressing" plates, transite boards of the proper thickness are placed in each space between successive plates, with two boards on the outside of the end plate. The group of plates is then put under pressure, either to strengthen the plates or to force the active materials back into the grid, flush with the surfaces of the grids. A large majority of the negative plates require such pressing, as the most common fault with negative plates is the bulging out of the active material, thus causing a poor contact with the grids and consequently resulting in a loss of battery capacity.

Many garagemen press battery plates in an ordinary bench vise. This is hard on the vise, as acid drops from the plates on the iron parts of the vise, which in time becomes badly corroded and rusted. Such a vise is weak, breaks easily, and grows very stiff and hard to operate. The vise is therefore not well suited for this work because it is made of metal.

A further advantage of the Ambu battery plate press is that there are no iron parts near the plates from which bits of iron may fall on the plates. Three groups of plates may be pressed at once in the Ambu battery plate press, thus resulting in a considerable saving of time. The complete presses may be purchased from the American Bureau of Engineering, Inc., 1018-24 Wabash avenue, Chicago, Ill.

PISTONS FOR ALL MAKE ENGINES.

Butler Mfg. Co. of Indianapolis, who specialize in cylinder regrinding, pistons, pins and rings, offer to the small shop who have small facilities for reboring or regrinding unexcelled service in pistons for all make cars.

Their extensive equipment, efficient management and large stock enables them to furnish pistons in quantity or single sets at very reasonable cost. The quality of workmanship and material is very high and they have established standards which will help build the business of the small shop man and secure results for the customer.

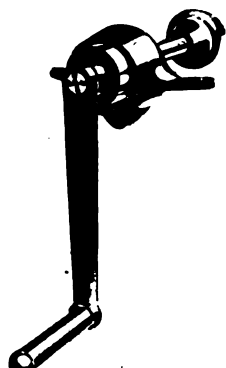
The purchase of a set of pistons from this firm buys service as well, for the makers are able to furnish at any time pistons in case of accident by having the job number which is on the pistons.

Chas. R. Butler, owner and engineer, has direct supervision over the designing of the pistons. His twenty years of experience in the automobile game has well acquainted him with the trials and contentions of the garage and repairman, and is able to meet him on common ground.

The price list which is issued by this concern is very complete and can be had on request, and gives definite prices on all size pistons.

THE CARSON KICKLESS CRANK.

A patented safety crank for Ford cars, called the Carson Kickless Crank, is now being marketed by the Carson Manufacturing Company of Richmond, Va.



The crank is sold under a forfeit of \$100 if a person using the device is injured by the kick of the crank handle in case the motor back fires in cranking. The mechanism of the device is apparently quite simple and adds practically nothing in weight to the car.

As shown in the accompanying illustration, the new crank consists of very few parts of case hardened steel. It is claimed for it that there is nothing to break or get out of order and can be attached by the most inexperienced motorist in a few minutes, using tools that every car is equipped with. The crank retails for \$7.50.

We are advised that heavy national advertising will be used to create interest among motorists and the trade and that the company is already several thousand cranks behind on orders.

HOWE SEARCHLIGHT HAS INTERESTING BRACKET.

Inasmuch as the idea behind the searchlight is the providing of a freely turning light, it is obvious that the bracket is of primary importance.

A chief advantage of the Howe Spotlight is its ingenious patented bracket. This bracket is of the universal joint type and both joints turn at the same time so that the lamp can be moved instantly to any angle. It is directed with very little effort. The driver turns it readily with the one hand as he steers with the other. Although moved so easily, the lamp stays where it is directed until again moved. This is because of the patented spring control. Two coil springs hold the two joints in a firm, even pressure—make it easy to turn, but hold it

firmly wherever turned, unaffected by jars and vibration.

The Howe bracket is attached to the windshield frame through the medium of a detachable clamp. This clamp is made in seven styles, one of which is guaranteed to fit perfectly any windshield, whether the post be round, square or oval. Loosening the set screw releases the lamp and its bracket for use as a trouble lamp.

The wire is concealed in and protected by the hollow bracket, and the "on and off" switch, located in the neck of the lamp, can be operated even by a heavily gloved hand in the same motion with which the lamp is directed.

The two Howe lamps are the No. 8 with 4-inch rear view mirror attached over the door, and the No. 9, also with 4-inch rear view mirror. The price of each of these lamps is \$8.00. The same model without the mirror can be purchased for \$7.50. Two single shell Howe spotlights are also made, retailing at \$4.00, or \$4.75 with rear view mirror.

THE "PROTECTO" SPARK PLUG.

The weakest part of a spark plug has always been the insulator, which is generally made of porcelain, and is very easily broken by a slight blow. A very large percentage of broken porcelains are broken by the slipping of the wrench used to remove the plug for cleaning or adjusting.

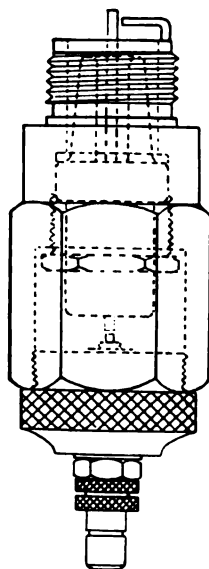
Manufacturers have attempted the use of other materials for insulators, but without great success, porcelain, with its drawback of easy fracture, being generally accepted as the only material that will satisfactorily withstand the heat of the explosion chamber.

Reference to the illustration of the Protecto Plug will show the shell is extended upward entirely enclosing the porcelain insulator, and protecting it from breakage from the outside. The best of porcelain is used as an insulator, locked in the shell by suitable lock nut, to remove which, if necessary, a special wrench is furnished with each complete set of plugs.

An additional feature is shown at the top of the plug, which consists of a removable fibre head, which when screwed in place leaves a gap between the terminal stud electrode and the plug electrode, acting as an intensifier that by this method of manufacture is made a part of the spark plug.

Firing points of the best nickel alloy are provided, the central electrode being one piece without weld.

The manufacturers believe that they have succeeded in producing a practically fool-



proof plug, something that has not heretofore been on the market.

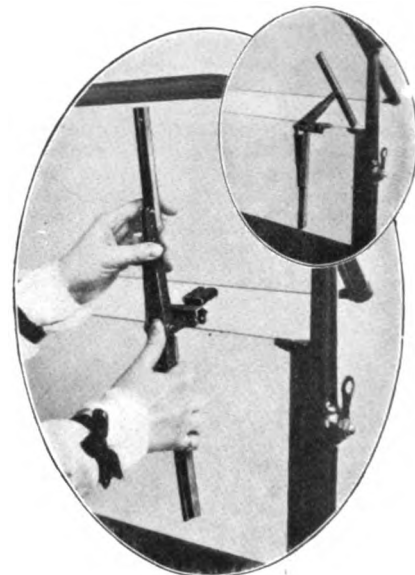
The plug is made by the Wales Adamson Co., Chicago, Ill.

CLEARER FOR WINDSHIELDS.

A protection for motorists which fills the gap of a necessity comes in the form of a clearer for the windshield and is known as the Universal Rain Rubber. The device clears both the top and bottom glass clean across and has as its unique feature a traveling section which slides in the slot.

It attaches instantly—holds firm as a vise—but slides without effort. Multiple rubber—two pieces of gum rubber—make the cleaner flexible with two cleaning surfaces on each arm. The rivets are topped with celluloid heads, which will not scratch the glass.

A single stroke of the hand moves it from one side to the other. One of its most desirable features is the fact that it can be



removed by simply opening the glass and lifting the Rain Rubber off.

It is made in five different models, designed to cover any known type of two-piece windshield. Manufactured by Tri-Continental Corporation, Buffalo. Price in U. S. A. \$1.50. Attractive terms to dealers.

L. V. FLECHTER & COMPANY OPEN DETROIT BRANCH.

L. V. Flechter & Company, well known New York carburetor manufacturers, have opened a factory branch in Detroit at 790 Woodward Avenue. George K. Parsons, sales manager, was for five years connected with the sales organization of the Ford Motor Company and later handled the national distribution for the Disco Self Starter Corporation of Detroit. Frank M. Eldredge, who has been associated with several motor car makers as advertising manager and who conducts an advertising bureau in Detroit, has been engaged to handle all advertising.

The Flechter carburetor has been known to the trade since 1910, being manufactured in the Neptune Meter Company plant at Long Island City, which has a capacity of 2,500 carburetors per day. A special carburetor for Fords made by the company is called the Trident.

J. Herbert Ballantine, president of the Neptune Meter Company of New York, and J. Bayard Kirkpatrick, vice-president and secretary of the same concern are president and treasurer of the Flechter Company. Andrew Kirkpatrick, vice-president and secretary, has spent seventeen years in the automobile business, eight years in carburetor manufacture and experiment work.

For the Heavy Truck

you need a lubricating oil which will retain its "body" under every load and speed condition. Such an oil is

For
Any Make
Car

Polarine

THE PERFECT MOTOR OIL

At Any
Motor
Speed or
Temperature

Polarine maintains a film of oil between all reciprocating metal surfaces. It reduces friction to a minimum, enabling the engine to utilize all the power it is designed to generate. Polarine *adheres* closely to the surface of the bearings and to the cylinder walls, resisting all pressure to dislodge it and cause undue friction. Polarine is a pure mineral oil of the highest quality; it is free from a tendency to gum, and it is free from acids.

Lessens Depreciation

Polarine *minimizes* friction; hence avoiding expense in wear and tear of parts. Polarine insures maximum power of the engine.

Don't take our word for its merits. *Prove it.* When next you buy oil, get half a barrel of Polarine. Clean out your crank case with kerosene and when it is dry fill up with Polarine. *Then compare* for less carbon deposit, for smoother running engine, for less clogging of pipes.

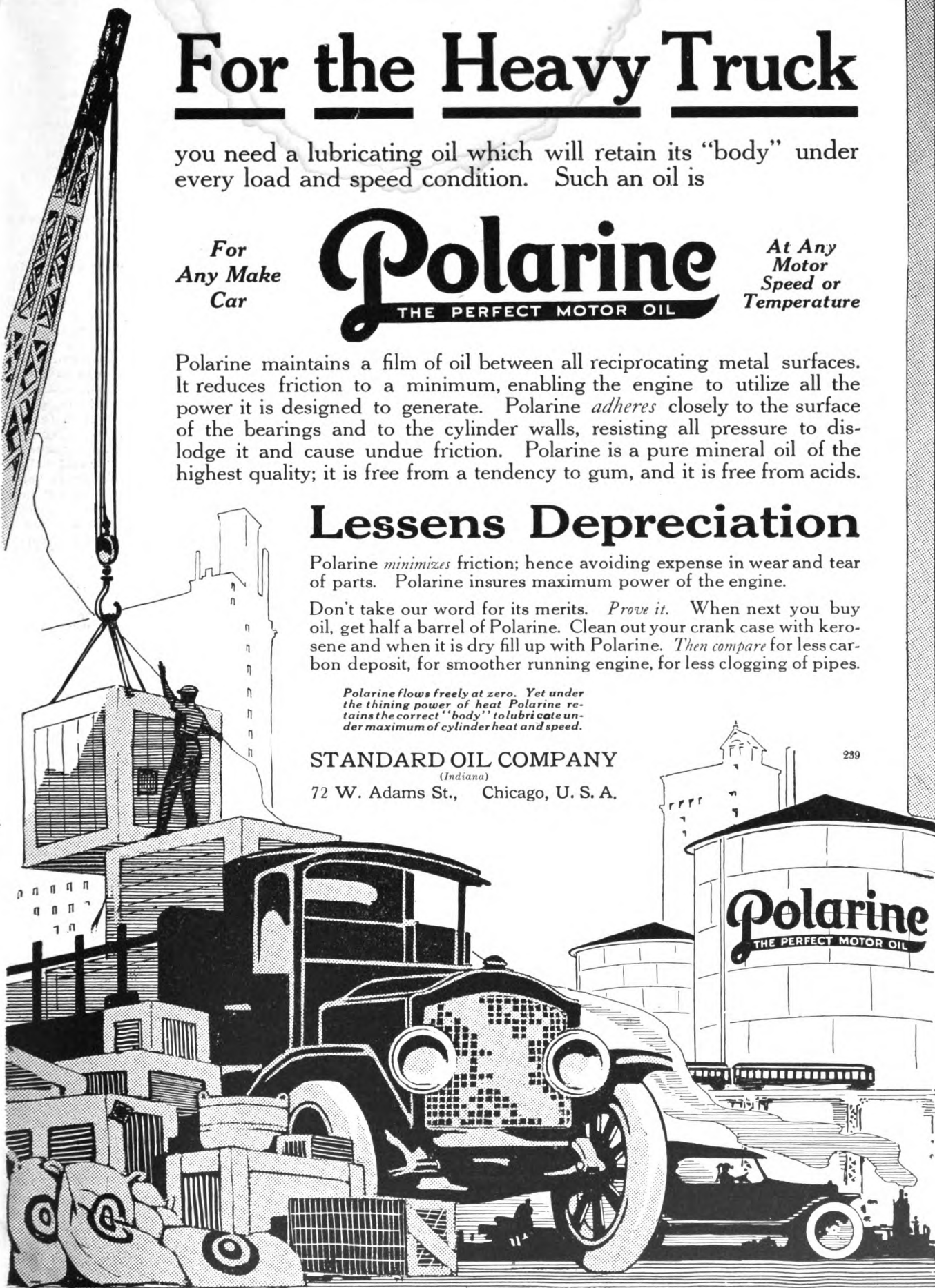
Polarine flows freely at zero. Yet under the thinning power of heat Polarine retains the correct "body" to lubricate under maximum of cylinder heat and speed.

STANDARD OIL COMPANY

(Indiana)

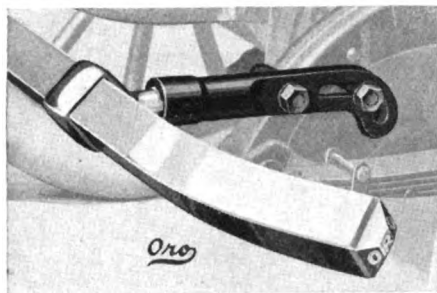
72 W. Adams St., Chicago, U. S. A.

239



ORO BUMPER HAS UNIVERSAL FITTING

The Au-To Compressor Company, Wilmington, Ohio, manufacturers of the Oro line of automobile accessories and air compressors, has recently placed on the market a new bumper known as the Oro foremost, with a universal fitting.



The bumper is adapted to all recent models of cars, having the mud apron and fenders extending all the way to the front tips of the chassis frame, width and curve of frame being taken care of with the special adjustment. The brackets are made of malleable iron, sturdy and well balanced. The springs are concealed in housing and are finished in baked black enamel. The bars are finished in black and nickel, specially rustproof treated.

MORE JOBBERS HANDLE BURD HIGH COMPRESSION PISTON RINGS.

Arrangements have been made by the Burd High Compression Ring Company of Rockford, Ill., with five jobbing concerns to handle orders for Burd high compression piston rings in the territory previously served by its Peoria branch office. The concerns are: Fitch Auto Supply Company, Graham Seltzer Company, Kelly Supply Company and the National Electric and Auto Supply Company, all of Peoria, and the Washington Auto and Supply Company, Washington, Ill.

HOWE MANUFACTURING COMPANY MARKETING TAIL LAMPS.

The Howe Manufacturing Company of Chicago, makers of the Howe spotlight, have announced a complete line of tail lamps. Their introductory announcement to the trade in a circular, contained this description:

"All Howe tail lamps are equipped with National Mazda 6 volt, 2 candlepower bulbs, double contact unless otherwise specified. Each lamp is packed in high grade, individual, labelled carton. The lenses are genuine ruby semaphore. The finish is high grade black enamel."

The tail lamp is made especially for Ford cars and has 2 bulbs and 2 plugs. The one bulb is an 18 volt taking its current directly from magneto when motor is running. The other bulb is 3 volt connected to 2 dry cells. When motor is running, current is taken from magneto—when motor is idle, a throw of the switch to the dry cells continues the light.

DAYTON WIRE WHEELS FOR CHEVROLET CARS.

The Dayton Wire Wheel Company of Dayton, Ohio, is manufacturing Dayton wire wheels for Chevrolet cars. These are constructed after the design of the Ford car wire wheel made by the company for some time. It is claimed that the patented triple-spoke design of the Dayton wire wheels makes them five times as strong as wooden wheels and that they will not collapse under the most violent impact.

Dayton-Chevrolet wheels are sold in sets of five—the extra wheel being carried with tire

inflated, ready for instant mounting. The hub-cap and hub-cap mountings are furnished, which makes it a very easy matter to change from wooden wheels to the Dayton-Chevrolet wheels.

DETROIT SHOW CASE.

To meet the demand for a practical accessory display case, the Detroit Show Case Company of Detroit has designed a special case for the purpose. Dealers have been able to appreciably build up their accessory sales by the aid of these cases and the present demand promises to increase as others learn of its advantages.

This case ranges in length from five to ten feet and contains from 35 to 70 drawers of graduated sizes. Some of the drawers are built double width, with removable partitions, for the display of larger articles. Each drawer has a bronze card holder and a brief description with price makes it easy for each customer to practically sell himself. Heavy beveled plate glass is used on top and clear double strength glass on sides and front. While golden oak finish is standard, the makers are in position to ship in birch finish also.

STEWART SPEEDOMETER FOR FORD SEDANS AND COUPELETS.

This model of Stewart speedometer is designed especially for Ford sedan and coupelet models. It combines all of the good features of the regular model, but is furnished with a special flange for installation on enclosed cars which do not carry an instrument board.



The plate is installed to the cowl by means of two nickel head screws. It is not necessary to alter the car in any way. All difficulties of installation have been eliminated by the very unique design of this model.

Every Ford sedan owner will want one of these handsome instruments. The black enamel flange and black-faced instrument harmonizes with the fittings of the car itself. The speedometer looks as though it were a part of the car, not an afterthought addition.

The speedometer is built on magnetic type, with 60-mile capacity rotating speed dial. The Stewart odometer consists of 100,000-mile season register and 100-mile trip register. The trip register can be easily reset to any mile or tenth of a mile without disturbing the season register.

AMERICAN BUREAU OF ENGINEERING GETS INJUNCTION.

The American Bureau of Engineering, makers of AMBU, the electric trouble shooter, through its attorneys appeared be-

fore Judge Carpenter in the United States Circuit Court recently and obtained a restraining order prohibiting the sale of the so-called Official Wiring Guide as published by the International Motor Institute.

The contention of the American Bureau of Engineering was that the wiring diagrams published and offered for sale by the defendants are deliberate copies of the 400 copyrighted, authentic wiring diagrams of the American Bureau of Engineering. As part of the comprehensive information comprising AMBU service, the AMBU wiring diagrams, distinguished by the circular copyright imprint of AMBU, are declared to be standard and authoritative.

NEW OIL-BURNING GARAGE HEATER.

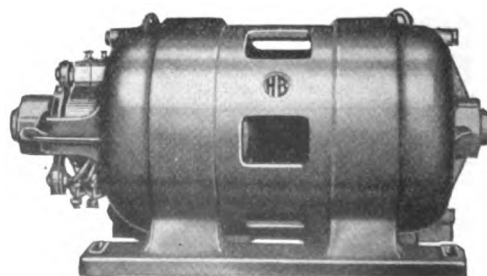
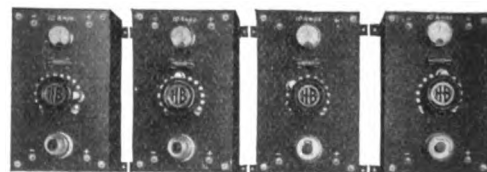
An oil burning garage heater that will undoubtedly appeal to automobile owners has been brought out by the Scientific Heater Company, of Cleveland, Ohio, makers of the Scientific gas heater. It burns either fuel oil or kerosene and embodies a new principle in oil burning. The burner itself is wickless and sootless, and, no matter how strong the flow of fuel, will give perfect combustion.

This new Scientific heater is in no sense a stove, and embodies none of the characteristics of the usual oil stove. It is so constructed that all heat escapes from the top, and none is radiated from the sides, thus making it practical for use in garages where there is little space between car and wall. It is built on the principle of the miners' safety lamp, by which all air for combustion is taken through a fine gauze and through which flame will not pass. Gasolene can be poured over and all around the heater without the slightest danger of fire.

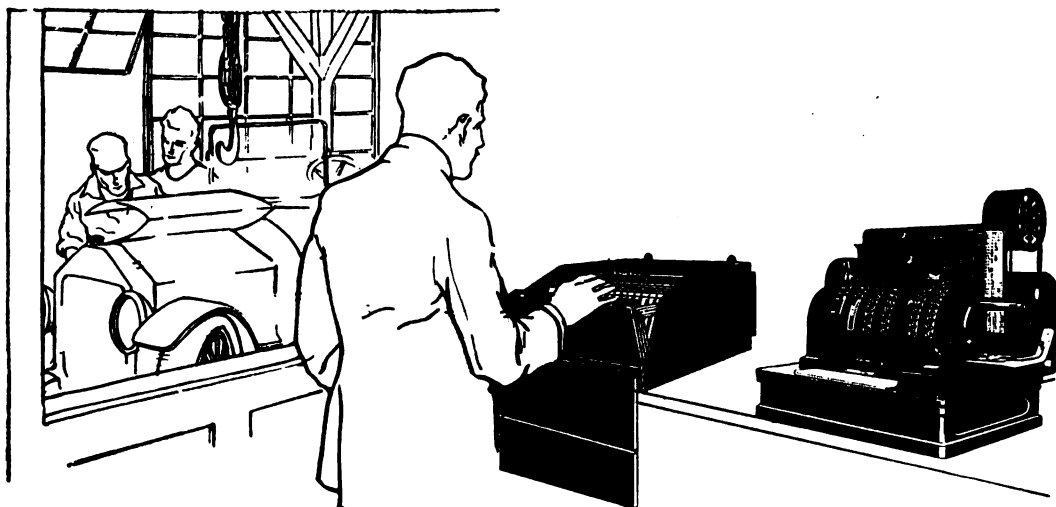
HOBART BATTERY CHARGING OUTFIT.

For the garage man going into battery or service work on an ample scale, or for the garage that has outgrown its present equipment, Hobart Brothers Company of Troy, Ohio, have brought out a new 32 battery capacity charging outfit.

With the HB outfit batteries in all stages of charge can be handled by the four charging lines of this equipment, caring for eight batteries in each line. Batteries requiring different charging rates can be handled according to their individual needs, due to the ample output of the machine. Different voltage batteries can also be charged in the same line, due to the automatic voltage control of the generator.



The outfit is sold on a payment plan that should enable the equipment to pay for itself while being used. The selling plan calls for a reasonable initial payment and the balance to be paid in ten monthly payments.



Up-to-date System for Garages

Electrically Operated National Cash Register

Greatest labor-saving machine for garages and service stations.

It does 15 things in three seconds.

It gives a separate record of money received for storage, tires, oil, gas, repairs, etc.

Advertises your goods direct to your customers.

It does quickly what helpers can't do.

The New N. C. R. Credit File

Cuts out all bookkeeping of customers' accounts.

No customers' ledger, blotter or daybook.

Every customer's account balanced to the minute.

Complete record with one writing. Saves time and work.

Customers like it; it saves their time.

Prosperity is increasing. Hence don't delay.

Order now and get the profits which our system will make for you. It more than pays for itself out of the money it saves. Sold on small monthly payments.

Old cash registers repaired, bought, sold, rebuilt and taken in exchange for new registers.

To Dept. 3301;

National Cash Register Co., Dayton, Ohio

Please send me full particulars of your latest model cash register and the new N. C. R. credit file.

Name _____

Business _____

Address _____

Get the benefit of these prosperous times.

Cut out this coupon and mail it today.

Among the Manufacturers and Executives.

George L. Brush, Canadian representative of the Elgin Motor Car Corporation, took an order at Vancouver, British Columbia, recently which surprised him. He sold an Elgin six to H. L. Gould of Dawson City, Alaska, for use in the Yukon district. Mr. Gould told Mr. Brush of the road building activities around Dawson City where it will be possible to motor out of the city very soon over a 50 mile stretch of road. The length of this roadway is to be 100 miles within the coming year. The Elgin six, as far as is known, is the first touring car purchased for use in the Yukon district.

Y. F. Stewart of Cleveland has been made director of sales for the Economy Motor Company, Tiffin, O., according to an announcement by George C. Wiseman, secretary of the concern.

Charles S. Ash has been appointed chief engineer of the National Wire Wheel Works, Inc., Geneva, N. Y., maker of Pasco quick change wire wheels. H. E. Van Horn, the Pasco sales manager, announces that Mr. Ash will have entire charge of the manufacturing department. Mr. Ash resigned a similar position with the Wire Wheel Corporation of America to go with the Geneva concern.

C. H. Bassett, veteran of the automobile business dating back to the earliest days, is now Southern zone manager for the Elgin Motor Car Corporation. Mr. Bassett has traveled out of Michigan during the life time of the automobile business with the exception of one year when with the Selden Motor Vehicle Company. He was with the Studebaker Corporation when that organization was located entirely at South Bend, with the Marquette, Buick, the Maxwell, Bour-Davis and other companies. Mr. Bassett has closed many contracts with distributors, including the Woodruff Machinery Manufacturing Company of Atlanta.

Walter Bamford, a graduate of the Olds company, as was the case with so many leaders of the automobile field, has been appointed production manager of the Fulton Motor Truck Company at Farmingdale, Long Island. Mr. Bamford was connected with the Detroit Motor Car Company of Detroit.

Walter F. Sheehan announces he has resigned as general manager of the Globe Motor Truck Company, East St. Louis, Ill. He has not made any arrangements for another connection.

C. E. Pioch, formerly connected with the Packard Motor Car Co., Detroit, has been appointed chief engineer of the Fruchauf Trailer Company.

William A. Carrell, who for several years has been connected with leading automotive industries, has been appointed chief engineer and works manager of the Erd Motor Company, Saginaw, Mich. Mr. Carrell in his new executive capacity, will also direct the sales and advertising of the concern's tractor engine.

H. F. Harris has become a member of the engineering force of the Republic Motor Truck Company, Alma, Mich. Until recently he was assistant manager of the New York branch of the Willys-Overland Company and resigned to go with the Republic firm.

W. H. Taylor, former advertising manager of the Timken Roller Bearing Company, Canton, Ohio, and B. P. Garnett, recently with the Packard Motor Car Company, Detroit, have joined the staff of the Campbell-Ewald Company, the Detroit advertising agency.

Robert T. Walsh has been appointed director of the sales and advertising departments of the Electric Intake Heater Company, Jackson, Mich. Mr. Walsh was formerly advertising manager for the Briscoe Motor Company at Jackson and before that served in a similar capacity with the Maxwell Motor Company, Detroit.

E. H. Delling, a former member of the Mercer designing staff, has joined the engineering department of the Stanley Motor Carriage Company as designing engineer.

Rutherford Rau, who travels the Pacific Coast territory for the Elgin Motor Car Corporation, is very favorably impressed by business conditions in his district. The Irving Motor Car Company, at Los Angeles, has taken the distribution of the Elgin for Southern California and started an aggressive sales and advertising campaign.

Following the resignation of Lucius S. French, now a first lieutenant in the U. S. Ordnance Department, A. E. Vinton has been made advertising manager of the National Motor Car and Vehicle Corporation at Indianapolis. For more than eight years Mr. Vinton has been in charge of the National's export trade, and back in 1910 and 1911, when National cars were prominent in the road racing world, served as advertising director. He retains his position as export sales manager.

The Hawkeye Truck Company, which is capitalized at \$300,000, has taken over the business of the Hawkeye Manufacturing Company at Sioux City, Iowa. The officers are: President, R. A. Bennett; vice-president, F. W. Kemp; treasurer, A. T. Bennett, and secretary, L. D. Baggs.

Joseph D. Porter has resigned as New York branch manager of the King Motor Car Company to go into business as the King dealer at Wichita, Kans. Mr. Porter has had a long and varied experience in the industry. For a time he was vice-president of Automobile Topics, later he was associated with the Regal Company, and afterward joined the King sales force.

Charles M. Hatch has become sales manager of the Commercial Car Unit Company of Philadelphia, makers of Truxton gear driven units for making trucks out of passenger cars. He was formerly with Parrish & Bingham and the Perfection Parts Company. Mr. Hatch succeeds George M. Davis.

J. F. Dugan is now production manager of the Stanley Motor Carriage Company. He was works superintendent of the Buick Motor Company for five years and for three and a half years production manager of the Chevrolet Motor Company.

C. E. MacConnell has joined the Hyatt Roller Bearing Company's staff of sales engineers at Detroit, according to an announcement by B. G. Koether, manager of the concern. Mr. MacConnell was with the Detroit branch of the B. F. Goodrich Company for the last three years.

THE E-Z QUICK TIRE PUMP.

The Mayo-Skinner Mfg. Co., 2115 Elston Ave., Chicago, have announced a new tire pump, the story of which is told in the name, according to a communication received from Mr. Mayo. This explanation of the name follows:



E-Z because it is a small diameter pump, therefore the piston area is reduced, resulting in very much less effort being required to pump a high air pressure. E-Z because the piston works perfectly free inside the barrel and has a large size air valve in the center through which the barrel is liberally supplied with air to its full capacity.

This valve is very simple in construction, having a flat leather washer which closes to an air tight seat on the pumping stroke and opens freely on the upstroke to admit a full charge of air. This feature removes the necessity of using a light weight cup washer, the purpose of which is to form a piston with a collapsible leather to permit air to pass around the edge of the piston and fill the barrel on the upstroke.

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A. A. G. O. and Its Activities

(Continued from page 36)

Getting down to some of the concrete results attained, Mr. Bubeck said: "We have succeeded in getting extra discounts on our purchases from several firms which I know we would never have received had we not been organized."

The matter of national and local affiliation is under consideration and some basis is expected to be worked out between local and national officers. In this way only can the organized power of the garagemen be wielded to the best advantage.

Casualty Interinsurance

As foreshadowed in the last issue of this journal, arrangements have been made to give members of our national association the benefit of strictly interinsurance protection of their casualty hazards. Accident, theft, employers' liability and other forms of liability hazard can now be covered by members of the A. A. G. O. at about what it costs the old-line companies, thereby effecting a saving to the insured of from 25 to 40 per cent, after providing a fair and fixed profit for the underwriter.

Members are now taking advantage of the fire insurance cost-reducing machinery of this association in goodly numbers, and we are glad to announce that, commencing this month, they can also avail themselves of similar machinery in reducing their casualty insurance costs.

Service

CAR owners will generally estimate the quality of your service by the quality of the product you sell.

Satisfaction to car owners—satisfaction and profit to dealers—that is the ultimate aim of Harvey Service.



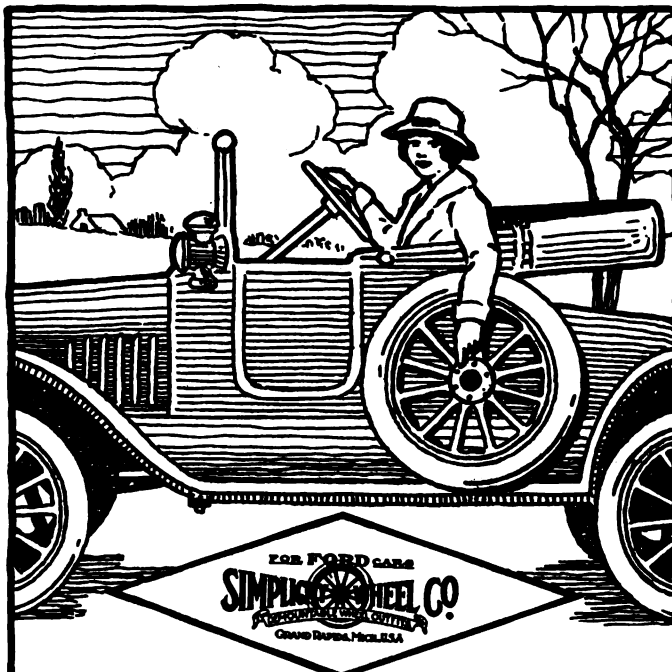
**PRACTICALLY
UNBREAKABLE**

THERE'S A HARVEY JOBBER NEAR YOU
Our new catalogue giving Complete measurements of over 900 Styles of Springs is yours on request

**HARVEY SPRING
& FORGING CO.**

922-17th Street

RACINE, WIS.



FORD driving made a pleasure by the Simplicity

Freedom from tire troubles is the greatest possible blessing to the Ford motorist. The

Simplicity Demountable Wheel Outfit

gives him that security and the resultant comfort. No wonder they are in such demand.

Any motorist, even a woman or boy, can change wheels easily in case of puncture, blowout or a broken wheel in four minutes or less of actual time. The change can be made with very little exertion and without soiling hands or clothing.

The spare wheel fits any of the four corners of the car.

The Simplicity Demountable Wheel Outfit

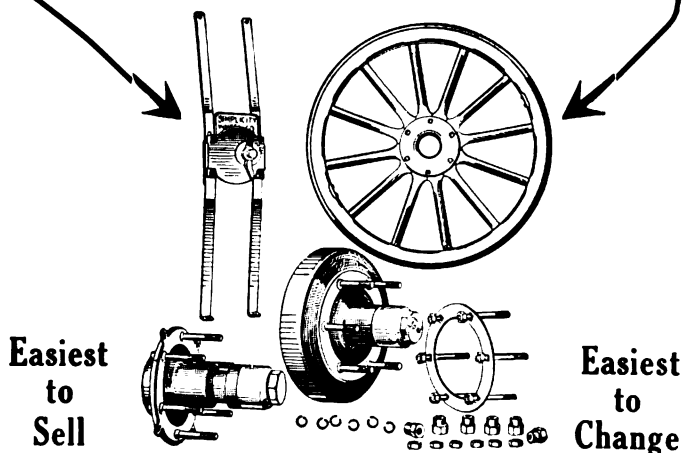
consists of the 4 complete wheel changes with one extra wheel, wheel carrier (side or rear) and speed wrench. All parts embody the best materials and mechanical construction. Each outfit comes securely packed in a separate carton with full instructions for installation.

Thousands of Simplicity Outfits are in use on passenger and commercial cars.

Dealers--Get This Agency

There are hundreds of sales in your territory. Mr. Dealer, for SIMPLICITY OUTFITS. They mean big profits to you with the least effort. One outfit will sell many others. Get this time and money saving device working for you. Write us at once for free descriptive literature.

SIMPLICITY DEMOUNTABLE WHEEL COMPANY
GRAND RAPIDS, MICHIGAN



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

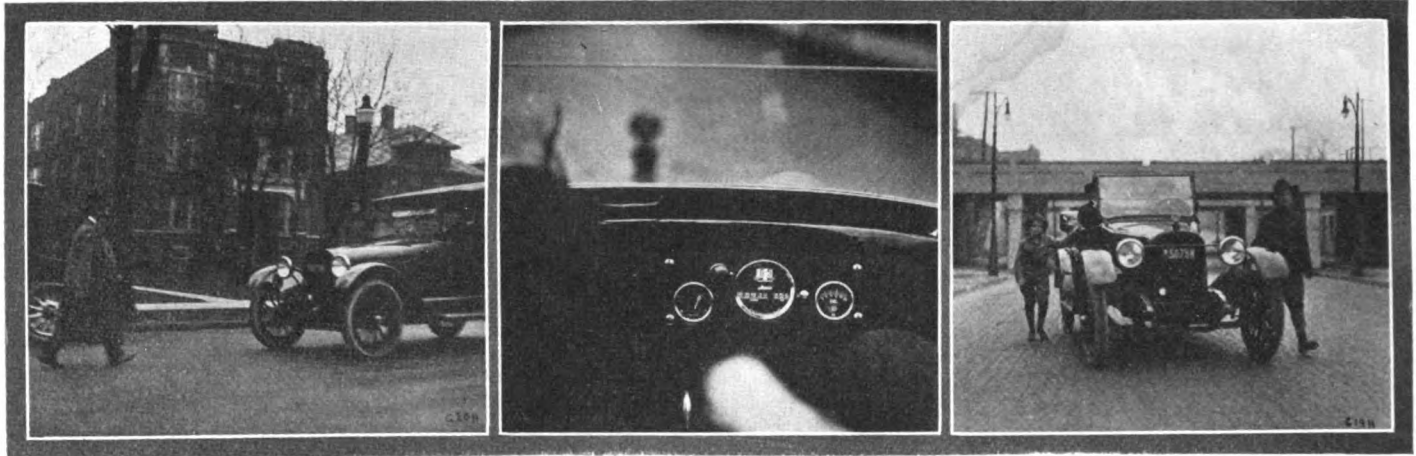
Low Speed Record in High Gear.

L. J. Robinson, Chalmers dealer for Detroit, has set a record in high-gear stunts. He wanted to know how low an average speed for twenty-four hours a Chalmers car could make in high gear. He may

not have reached the limit but he has set a new record for other slow-speed merchants to shoot at.

He obtained an A. A. A. sanction for the test, Mr. L. A. Hillman of Chicago being appointed as a member of the con-

test board. A stock five-passenger Chalmers touring car was used for the test. The car was run twenty-four hours, all the time in high gear. During the test the car ran 71.7 miles, an average of a little more than 2.9 miles per hour.

**STOCK QUOTATIONS**

These quotations of the bid and asked prices of automobile and tire manufacturing concerns are furnished by John Burnham & Company, Chicago and New York City.

Motor Stocks.

	Feb. 9		Jan. 10	
	Bid.	Asked.	Bid.	Asked.
Atlas Drop Forge Co.	..	40	..	40
Amer.-La France F. E., com.	55	65	55	65
Amer.-La France F. E., pfd.	75	..	75	..
Auto Body Co.	6	10	6	10
Briscoe Motor Car, com.	7	10	7	10
Briscoe Motor Car, pfd.	..	75	..	75
Chalmers Motor Co.	4	5	3	6
Chalmers Motor Car, pfd.	25	40	..	50
Chandler Motor Car.	83	84	73	75
Chevrolet Motor Car	119	121	109	111
Cole Motor Car Co.	..	100	..	100
*Continental Motors, com.	5½	6	5¾	6½
Continental Motors, pfd.	87	91	87	91
Edmunds & Jones, com.	15	25	15	25
Edmunds & Jones, pfd.	85	88	85	88
Electric Storage Bat.	45	52	45	52
Elgin Motor Car Corp.	5½	6½	6¾	8
Federal Motor Truck	31	35	23	28
Fisher Body Co., com.	26	34	30	33
Fisher Body Co., pfd.	75	87	89	91
Ford Motor of Canada.	185	192	165	175
General Motors, com.	140	142	114	116
General Motors, pfd.	83¾	84¾	81	83
Grant Motor Car, com.	2	2¾	1½	2¼
Grant Motor Car, pfd.	40	50	40	45
Harroun Motor Co.	2	2¾	2¼	3
Hendee Mfg. Co., com.	12	16	12	16
Hendee Mfg. Co., pfd.	70	80	70	80
Hupp Motor Car, com.	2½	3	2	2½
Hupp Motor Car, pfd.	75	80	75	83
International M., com., new.	13	15	13	15
International M., pfd., new.	58	61	58	61
Kelsey Wheel Co., com.	20	25	20	25
Kelsey Wheel Co., pfd.	74	78	80	88
Locomobile Co.	15	25	15	25
Manhattan Electric S., com.	40	48	40	48
Maxwell Motor, com.	28	30	25	26
Maxwell Motor, 1st pfd.	64	66	56¾	57¾
Maxwell Motor, 2d pfd.	25	26	20½	21½
McCord Mfg., com.	30	35	30	35
McCord Mfg., pfd.	90	95	90	95
Mitchell Motor Co.	29	33	19	28
Motor Products Corp.	35	42	35	42
Nash Motors Co., com.	85	95	75	90
Nash Motors Co., pfd.	80	86	80	86
National Motor Co.	15	20	3	18
Packard Motor Car, com.	95	102	95	103
Packard Motor Car, pfd.	91	94	92	96
Paige-Detroit Motor, com.	18	19	15	16

	Feb. 9		Jan. 10	
	Bid.	Asked.	Bid.	Asked.
Paige-Detroit Motor, pfd.	7	9	7	9
Peerless Motor Truck	18	20	7	12
Pierce-Arrow Mot. Car, com.	38	40	34¾	35¾
Pierce-Arrow Mot. Car, pfd.	89	91	95	97
Premier Motor Corp., com.	7	12	7	12
Premier Motor Corp., pfd.	..	75	..	75
Redden Truck Co.	8	15	8	15
Reo Motor Car Co.	17	18	16¾	17½
Republic M. Truck, com.	38	43	44	48
Republic M. Truck, pfd.	80	85	86	89
Saxon Motor Car, com.	9¾	10¼	7¼	8¼
Scripps-Roth Corp.	10	15	8	12
Smith Motor Truck Co., com.	1½	2	1	1½
Smith Motor Truck Co., pfd.	30	40	26	35
Spicer Mfg., com.	15	25	10	20
Spicer Mfg., pfd.	80	90	80	90
Standard Motors Co.	8	9	8	9
*Stewart-Warner Speed, Corp.	51½	52½	48	50
Stromberg Carburetor Co.	17	25	16	23
Studebaker Corp., com.	50	51	50¾	51¾
Studebaker Corp., pfd.	94	97	83	87
Stutz Motor Car Co.	46	48	39¾	40¾
United Motors Corp.	23¾	24¾	22	23
White Motor Co.	42	44	38½	39½
Willys-Overland, com.	17½	18½	17	18
Willys-Overland, pfd.	78	80	76	78

Rubber Stocks.

Ajax Rubber Co.	51	52½	48¼	50
Firestone T. & R., com.	96	98	98	100
Firestone T. & R., pfd.	96	98	96	98
Fisk Rubber Co., com.	51	55	45	47
Fisk Rubber, 1st pfd.	98	103	98	103
Fisk Rubber, 1st pfd., conv.	90	100	90	100
Fisk Rubber, 2nd pfd.	60	70	60	70
Goodrich, B. F., com.	47¼	48½	36	36¾
Goodrich, B. F., pfd.	97¼	100	94	96
Goodyear T. & R., com.	142	145	150	154
Goodyear T. & R., pfd.	99½	100½	95½	97
*Kelly Springfield, com.	46¼	47¼	43	44
Kelly Springfield, pfd.	75	85	75	85
Lec Tire & Rubber Co.	13	14	14	15
Marathon Tire & Rubber.	55	..	..	75
Miller Rubber Co., com.	140	150	130	140
Miller Rubber Co., pfd.	95	97	95	98
Portage Rubber Co., com.	111	113	109	111
Rubber Products Co.	105	110	105	115
Swinehart T. & R. Co.	..	38¼	16	26
U. S. Rubber Co., com.	57	57¼	52	53¼
U. S. Rubber Co., pfd.	99¾	101	97¾	98½

*Ex-dividend.



Garages, Service Stations and Owners of Electric Cars and Trucks

Our new, modern method of changing A. C. to D. C. for battery charging is far superior. The best by test.

**HIGHLY EFFICIENT, ECONOMICAL, RUGGED,
VERY EASY TO OPERATE
NO EXPENSIVE INSTALLATION NECESSARY**

THE *Breco* CONVERTER

is designed to meet the exacting requirements of hard, every-day service. It has been fully tested by years of practical application and has the endorsement of the highest authorities. It will give you genuine satisfaction.

**PRICES: FROM \$24.00 UP SIZES: FROM 1 BATTERY UP
BATTERY CHARGING**

Becomes a very simple, inexpensive and mighty profitable matter with the BRECO CHARGER.

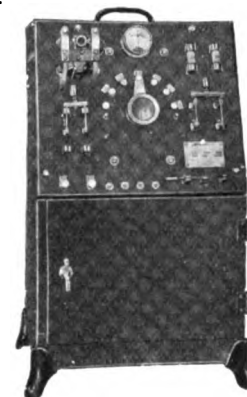
Write for our Catalogue No. 22

The Breco Electric Company

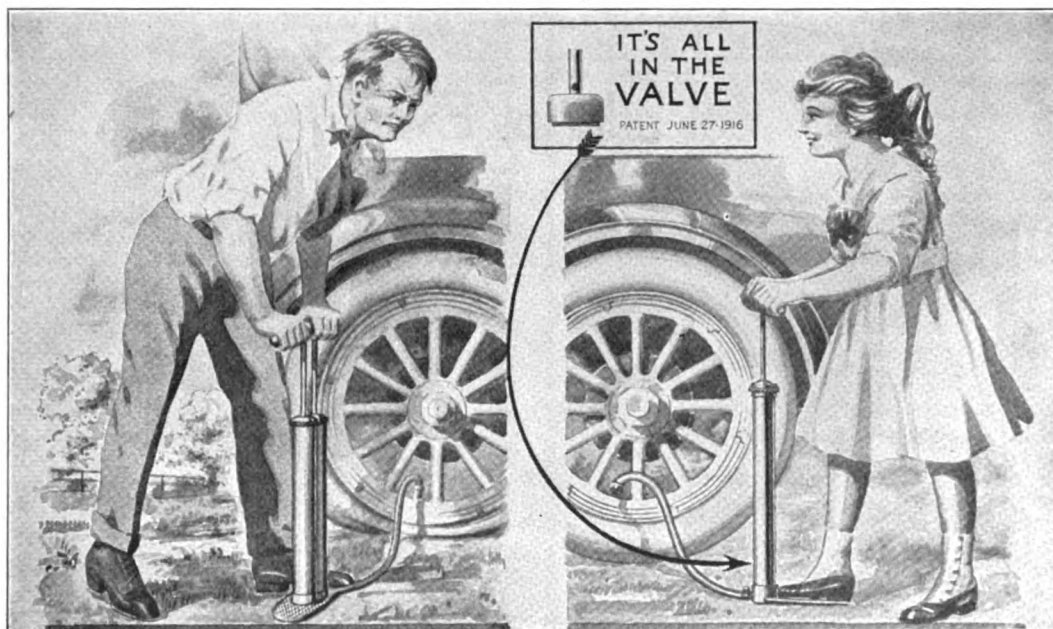
SOLE LICENSEES

206 HURON ST.

TOLEDO, OHIO, U. S. A.



DID IT EVER OCCUR TO YOU?



He: Curse my luck, can't see why they'll put a pump like this in such a good car.

She: Gee, I'm glad Dad bought this ROSE PUMP or I'd sure be stalled.

JOBBERS! DEALERS! USERS! More ROSE PUMPS actually purchased by dissatisfied users of out-of-date pumps last year than any other pump in existence. **There Is a Reason. Find Out Yourself. Write for a Sample.**

J. H. HANEY & COMPANY

HASTINGS, NEBRASKA

Manufacturers Rose Pumps, Grease Guns and Fan Belts

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Tractors to Be Feature of Show at Indianapolis

Tractors will have a prominent place in the seventeenth annual show to be held in the Hoosier capital during the week of February 25 by the Indianapolis Automobile Trade Association. The event gives promise of being the largest and most brilliant motor vehicle exhibition the people of Indiana have ever seen. It will be staged in a new and monster four-story building erected by the Diamond Chain and Manufacturing Company which will afford about 82,000 square feet of floor space.

John B. Orman, who has had long experience as an automobile show manager, will direct the exhibit. This year the Hoosier state claims the distinction of being third in the purchase of farm tractors and the show committee will feature tractor exhibits. Illustrated talks dealing with the tractor will be part of the daily program.

Numerous other attractive features will characterize the exhibit, particularly the elaborate decorations, floral and patriotic. The management is having a great service flag made to show how Indianapolis automobile men have answered the call of their country. Music, both band and orchestral, is announced.

E. W. Steinhart heads the Indianapolis organization. Associated with him are Robert V. Law, vice president; Alvin H. Smith, treasurer; A. W. Hutchinson, secretary; Joseph M. Bloch, George M. Kanouse, B. M. Wylie, Fred I. Willis and N. H. Cartinhour, directors.

The members of the show committee are Vice-President Law, Treasurer Smith, Director Bloch and F. Ellis Hunter.

ENDURANCE.

On sunny days, and when it rains, I go a-scooting in my Haynes. In winter, when there's sleet and snow, I pour in gasoline and go. And in the spring, when grass is green, I fill my tank with gasoline, and whiz along the country road, as though pursued by men I owed. And in the summer, when the sun is sending heat down by the ton, I pour more gas into my Haynes, and go cavorting o'er the plains. And in the autumn, when the air is feeling frosty everywhere, I buy a bowl of gasoline and on the turn-pike I am seen.

All through the year, in rain or shine, I push that good old car of mine.

Up stony hills, so beastly steep, they'd make a span of horses weep, I take my way, I calmly climb, and reach the summit every time. Through sand and mud, through sleet and snow, I pull, where'er I want to go. I've never yet been stalled or stuck; and some of you will say it's luck; but there are many lucky guys—they are the fellows who were wise, who blew their money for the Haynes, when they were buying motor wains.

I often wonder how they make a car that doesn't balk or break beneath such usage as would hump a locomotive to the dump. The latter engine runs on rails; its nice smooth roadway never falls; it's nursed and doctored every day; mechanics trail it all the way, it's pulse they feel, it's works they test, where'er the blamed thing stops to rest. And notwithstanding all this care, it's always howling for repair.

My boat runs on the country pike; you know just what that road is like; in every furlong there's a jar that really ought to bust a car. I feed it gas and sparking oil, and no mechanics round it toil, unless I wind it round a tree, and break some rink-tums, two or three.

I wonder how it stands the strains, my good old never failing Haynes!—Walt Mason.

Tuthill Springs.

"Guaranteed forever against center breakage and guaranteed one year over all," is the substance of the claims made for their springs by the Tuthill Spring Co., 760 West Polk street, Chicago, Ill.



The particular advantage to the dealer in handling Tuthill springs is that the Tuthill Company has on hand in Chicago and with all its distributors a complete stock of springs for all cars. There is no delay in filling any order.

Spring manufacture is a skilled process, the actual engineering knowledge required being equivalent to that in building a cantilever bridge. Spring design is a compromise between strength and weakness. It must be strong enough for the maximum load and must give easy riding qualities with no load but the driver. Also, it must be proof against damage by side sway, torque thrusts and driving strains.

Herbert H. Jinnett, for the past several years connected with the Bell Telephone Co., of Philadelphia, has linked himself with the Staybestos Mfg. Co., of the same city, where he has assumed the duties of credit manager.

Calendar of Events

Feb. 11-16—Kansas City, Mo.—Tractor Show.
Feb. 11-16—Elmira, N. Y.—Elmira Automobile Club Show, Armory.
Feb. 11-17—Toledo, O.—Tenth Annual Show, Terminal Auditorium.
Feb. 13-16—Fort Wayne, Ind.—Automobile Trade Association Show.
Feb. 16-23—Hartford, Conn.—Show, State Armory.
Feb. 16-23—Newark, N. J.—Show, First Regiment Armory.
Feb. 16-23—Albany, N. Y.—Albany Automobile Dealers' Association Show, State Armory.
Feb. 16-24—San Francisco, Cal.—Second Annual Show, Auditorium.
Feb. 18-23—St. Louis, Mo.—Show.
Feb. 18-23—Waterbury, Conn.—Show.
Feb. 18-23—Des Moines, Iowa—Ninth Annual Show, Coliseum.
Feb. 18-23—Syracuse, N. Y.—Show, State Armory.
Feb. 18-23—Grand Rapids, Mich.—Fourth Annual Show.
Feb. 18-23—Springfield, Ohio—Show, Memorial Hall.
Feb. 18-23—Duluth, Minn.—Duluth Automobile Trade Association Show.
Feb. 18-23—Pittsfield, Mass.—Show, State Armory.
Feb. 18-23—Nashville, Tenn.—Show, Hippodrome.
Feb. 18-23—South Bethlehem, Pa.—Fourth Annual Passenger Car Show, Coliseum.
Feb. 18-24—Des Moines, Iowa—Second Annual Truck Show, Auditorium.
Feb. 19-22—Grand Forks, S. D.—Show, City Auditorium.
Feb. 20-23—Quincy, Ill.—First Annual Show, Armory.
Feb. 22-28—Brooklyn, N. Y.—Passenger Car Show, Twenty-third Regiment Armory.
Feb. 25-27—South Bethlehem, Pa.—Fourth Annual Truck Show, Coliseum.

Feb. 23-Mar. 2—Omaha, Neb.—Show, Auditorium.
Feb. 25-Mar. 2—Salt Lake City, Utah—Show.
Feb. 25-Mar. 2—Bridgeport, Conn.—Show, State Armory.
Feb. 25-Mar. 2—Indianapolis, Ind.—Seventeenth Annual Show, Diamond Chain Building.
Feb. 25-Mar. 2—Muskegon, Mich.—Second Annual Automobile Show, Merrill Auditorium.
Feb. 27-Mar. 2—Columbus, Ohio—Columbus Automobile Show Company Annual Exhibition, Memorial Hall.
Feb. 27-Mar. 2—Burlington, Iowa—Automobile and Truck Show.
Feb. 27-Mar. 6—Boston, Mass.—Salon, Copley Plaza Hotel.
Mar. 2-9—Brooklyn, N. Y.—Commercial Vehicle Show, Twenty-third Regiment Armory.
Mar. 2-9—Pittsburgh, Pa.—Show, Motor Square Garden.
Mar. 2-9—Boston, Mass.—Show, Mechanics' Building.
Mar. 4-9—Utica, N. Y.—Utica Motor Dealers' Association Show, Armory.
Mar. 6-9—St. Joseph Mo.—Annual Show, Auditorium.
Mar. 6-9—Clinton, Iowa—Show, Coliseum.
Mar. 6-9—Mason City, Iowa—Automobile and Truck Show.
Mar. 6-9—Raleigh, N. C.—Show.
Mar. 8-11—Green Bay, Wis.—Show.
Mar. 11-16—Cedar Rapids, Iowa—Cedar Rapids Automobile Trade Association Annual Show.
Mar. 19-24—San Francisco, Cal.—Motor Truck Show, Auditorium.
Mar. 20-29—Trenton, N. J.—Show, Second Regiment Armory.
Mar. 20-23—Sioux Falls, S. D.—Sioux Falls Automobile Association Show, Coliseum.
Apr. 9-19—Stockton, Cal.—Show.



With This HB
500 Watt Equipment
You Can
Make

Big Profits

In Recharging Auto
Storage Batteries

Big money-maker all the year 'round, but cold weather, heavy starter service and excessive use of lights, make battery charging profits run highest when other business runs low. Other garages are clearing \$30 to \$60 a month extra profit—and so can you. Recharges 1 to 7 batteries at a time. Current cost 12c to 15c per battery. Autoist pays 75c to \$1.50. Profit of 60c to \$1.35 on every battery. Quick charging. Big profits.

\$15 Puts This Money-Maker in Your Garage

Balance in 8 monthly payments of \$20 each. Earnings should easily pay—and make good profits besides. Tear out and mail this ad for further particulars or send \$15 with this ad and get charger for special ten days' trial. Absolute money-back guarantee. We take all the risk. Start making profits NOW.

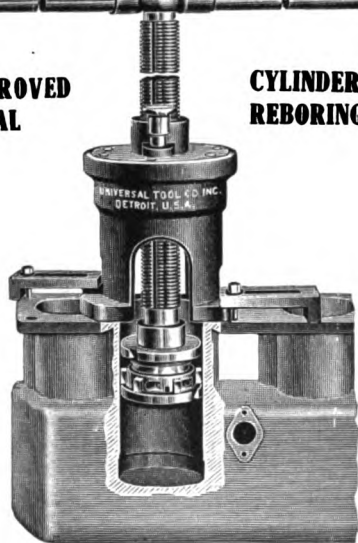
Hobart Brothers Company
Box G2 Troy, Ohio



A Big Money Maker
All the Year Round

THE IMPROVED
UNIVERSAL

CYLINDER
REBORING TOOL



Cylinder Reborbing is expert work, which builds up a trade of satisfied customers, and in many cases the only remedy for lost power.

THE IMPROVED UNIVERSAL CYLINDER REBORING TOOL is simple to operate and bores perfectly round and smooth. Adjustable from 2½" to 5 1/16".

You can make liberal profits if you are equipped for this work.

For Sale by Your Jobber

Write for Catalog No. 10

THE UNIVERSAL TOOL CO., INC.
DETROIT, MICH. U. S. A.



Cold Weather Profits

Here's a steady seller—and a profit-maker—for these cold days of February and March. It is Ad-El-It Non-Freezing Liquid—and it won't freeze even at 50° below zero when used undiluted. Contains no glycerine, alcohol or injurious chemicals. Won't burn or explode, and does not evaporate like alcohol. Harmless to metals or rubber. And it *does* protect the motorist against radiator freeze-ups—so efficiently and so safely that it makes warm friends for the dealer who sells it.

Sells in gallon cans at \$1.50 per gal., in 3 gal. cans at \$1.45 per gal., in 5 gal. cans at \$1.40 per gal. A long profit for you. Order now from your jobber or from us.

Made by the makers of Ad-El-It
Motor Carbon Remover.

Send for New Book

"Auto Troubles Cured"—most helpful book of its kind ever printed.
Sent free upon request.

Dept. A-2

ADAMS & ELTING CO.

716-726 Washington Blvd., Chicago
69-73 Washington Ave., Brooklyn



AD-EL-ITE
NON FREEZING
LIQUID

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air.**

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.

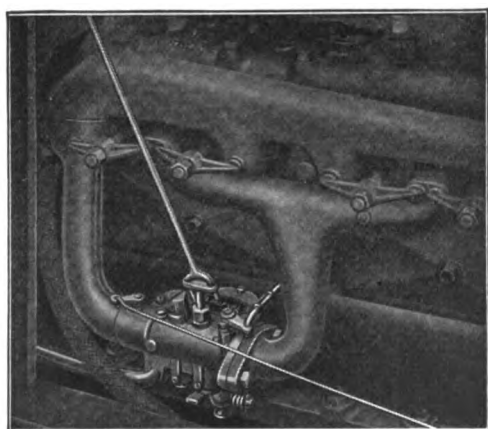


National Rubber Filler Co.

MIDLOTHIAN TEXAS.



Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

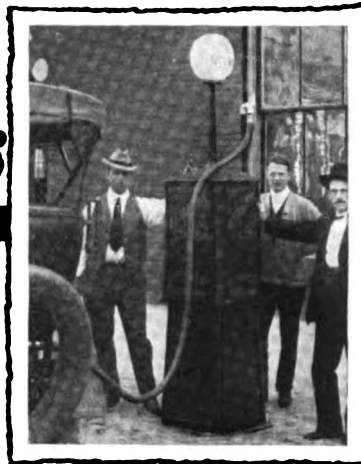
FLINT, MICHIGAN, U. S. A.

Master Electrics Are Pulling Business For Over 2000 Retailers

A Master Electric at your curb will make your place the big automobile headquarters of your town. The motorists appreciate the speedy, accurate service of the Master Electric, and will go out of their way to be filled up by one. Many garage men tell us that the Master Electric has brought customers they could never have otherwise hoped to reach and has doubled, tripled and even quadrupled their accessory and supply business.

The Master Electric pumps gasoline with the mere press of a button; 25 gallons a minute or down to a drizzle at the will of the operator.

The Master Electric is easy to buy, too. We have a time payment plan which spreads the payments over ten months. Clip the attached coupon and we will tell you about it.



MILWAUKEE TANK WORKS

151-201 Becher St. Milwaukee, Wis.

30 different types of gasoline and oil pumps and storage outfits.

Prompt Shipments from warehouse in New York, Milwaukee, New Orleans or San Francisco.

Milwaukee Tank Works.

Gentlemen: Without obligation to me, please send me full information and complete prices on your Master Electric Filling Station.

Name

Address

City....., State.....

WILLARD SUPER HEATER

A great saving for the car owner.
Big Profits for You

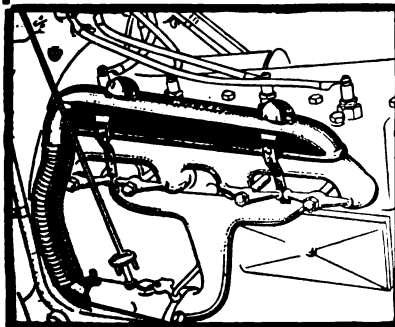
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company
1002 Washington Boulevard
Chicago, Illinois



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hilite Portable Crare—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.



Smooth as the flight of the birds



going South for the Winter, is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

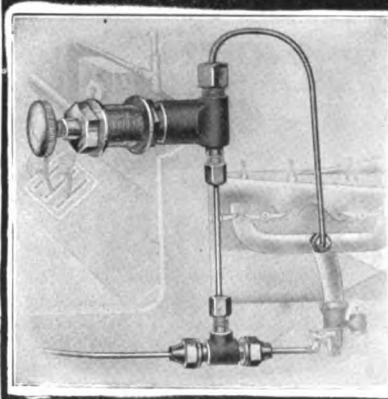
The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



Sell C-W INSTANT GUN PRIMERS!



Every car owner desires a C-W Primer for instant starting during cold winter days.

In a class by itself!

The C-W Instant Gun Primer secures immediate results without back fire or leakage.

Three big features:

Shoots a rich spray of gasoline into cylinders, causing immediate ignition; no back fire; no leakage.

Will readily appeal to your winter motoring customers.

this coupon with \$10.50 brings six Primers together with C-W Primer mounted on display counter board—

C-W MFG. CO.
PERU, IND

Crum-Wiley Mfg. Co., Dept. H.,
Peru, Ind.

Attached find \$10.50, for which ship by express six C-W Instant Gun Primers, nickel, and one on display board.

Name

Address

MAKE MORE PROFIT
BY USING

STORM Reboring Machines

Don't deliberately send this profitable reboring work, which is rightly yours, out to others; do it yourself and put the profits in your own pocket.

Storm Cylinder Reboring Machines

Are practical and a highly efficient equipment with which any repair shop can handle this profitable work.

No shop, large or small, complete without one.

It will save you time and money; keep your shop busy and make extra profit for you.



Our Machines Cover All Requirements

Hundreds are in daily use in all parts of the United States and Foreign Countries. Rebores all types of motors, automobiles, trucks, tractors, motorcycle and stationary engines of sizes now in common use.

The S. & O. Special Machine for Fords

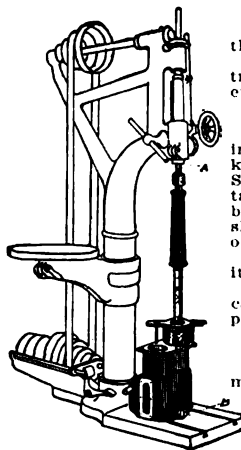
The most popular and successful Reboring Machine for Fords now on the market. Put out especially for Ford repair Shops, but will rebores other 3 1/2 in. detachable head motors, and being adjustable can be made suitable for other work should occasion require by the addition of extra parts.

Our machines will increase the popularity and prestige of your shop. Equipped for operating by hand, but can be furnished for operating by drill press as shown.

For Sale by Leading Jobbers

We furnish pistons for all makes of motors. Write today for literature and prices.

STORM MANUFACTURING CO.
Dept. A Thompson, Iowa



I Save Money Every Day

with the **HARTON** LOOSE LEAF **GARAGE PLAN**

GARAGE OWNERS You are losing money every day if you have not installed the HARTON LOOSE LEAF GARAGE SYSTEM. The HARTON SYSTEM is an automatic book-keeper that cannot make mistakes and requires no salary.

The HARTON SYSTEM turns losses into profits. Garage keepers write us telling how accurate and helpful this proven System is.

A Dollar Saved is a Dollar Earned

This Page is the Customer's Bill the one underneath is your copy

A FEW REASONS WHY

- 1—When you make an entry a bill and charge are made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.
- 5—Statements ready at end of month for immediate mailing.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

Send for Descriptive Folder and Full Particulars
THOMAS J. HARTON & CO., Inc.
Loose Leaf Specialists 212-X Church St., NEW YORK

Fill Up Our Soldiers' Pipes

America's fighting men need tobacco to make trench life a little more comfortable. Here's a chance to treat the boys at the front.

"Our Boys In France Tobacco Fund" has been organized to furnish "smokes" for the American soldiers and sailors in active service.

All labor and administrative expenses are contributed so that every cent you give goes to pay for tobacco, which is purchased in large quantities at a low price.

One dollar buys four packages of tobacco and sends them to France. Each package, costing twenty-five cents, has a retail value of forty-five cents and keeps a man in "smokes" for a week. Every dollar sent to "Our Boys In France Tobacco Fund" buys a bundle of tobacco that would cost \$1.80 at your cigar store.

In every package is a post card addressed to a contributor to the tobacco fund. In accepting the package, the soldier or sailor agrees to send on the card a message to his benefactor in the United States. According to the plan, every person who gives a quarter gets his receipt from a fighting man in France.

The work of this fund is approved by the Secretary of War and the Secretary of the Navy.

Send as many dollars as you can spare. Write your name and address clearly.

"Our Boys In France Tobacco Fund"
25 West 44th Street, New York City

AMPECO PRODUCTS

Sell readily because their superiority is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece. If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

American Machine Products Co.

Marshalltown, Iowa



Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.

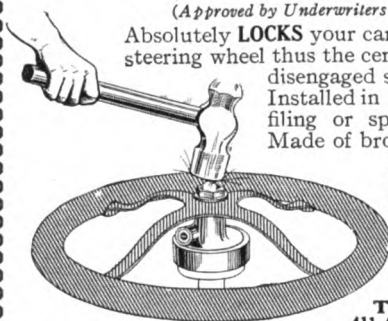


Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely LOCKS your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.



DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.

Check Up Your Workmen's Time

and know definitely just what each repair job costs. Keep an indisputable and correctly printed record of the exact time consumed in doing any repair work. Use



THE AUTOMATIC TIME STAMP

More and more service stations are finding that these machines are real money savers. They put your business on the firm foundation of actual costs to you. There isn't any guesswork. They save time, money and annoyance—eliminate losses and save profits.

Sample cost tickets and complete data sent on request.

Also, Makers of the Automatic Time Register, the Duragraph (Elapsed Time Recorder), and Time Recording and Computing Machines for all divisions of time and for all purposes.

THE AUTOMATIC TIME STAMP CO.

Automobile Dept., 161 Congress St. Est. 1880
BOSTON, MASS.

Originators of the art of printing time automatically

Do Business by Mail

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.	Wealthy Men	Fly Paper Mfrs.
Cheese Box Mfrs.	Ice Mfrs.	Foundries
Shoe Retailers	Doctors	Farmers
Auto Owners	Axle Grease Mfrs.	Fish Hook Mfrs.

Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

Have us write or revise your Sales Letters.

Ross-Gould, 1013X Olive Street, St. Louis

Ross-Gould

Mailing Lists St. Louis

The Proper Card for You

Your business is vastly too important to be represented by anything less than a

Wiggins Peerless Patented Book Form Card

Many of America's largest card users compliment the skill and care exercised in engraving a Wiggins plate by using Wiggins Cards exclusively. Ask for tab of specimens; detach them one by one and observe their clean cut edges and general excellence.



THE JOHN B. WIGGINS COMPANY

Established 1857

Engravers Plate Makers Die Embossers

705 People Gas Building
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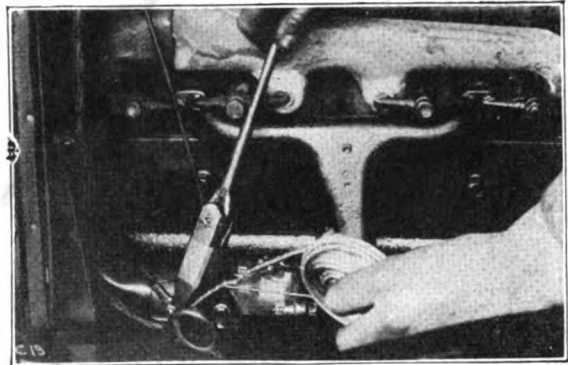
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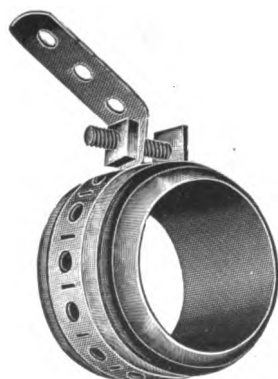
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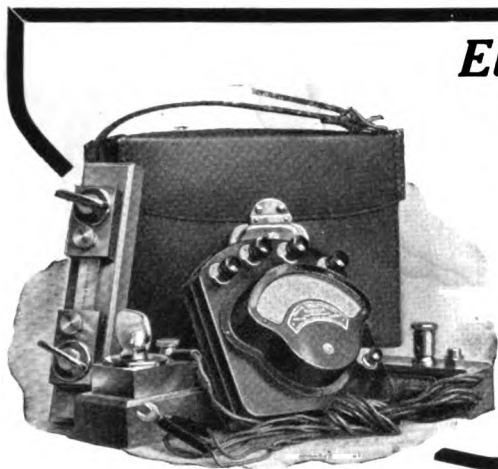
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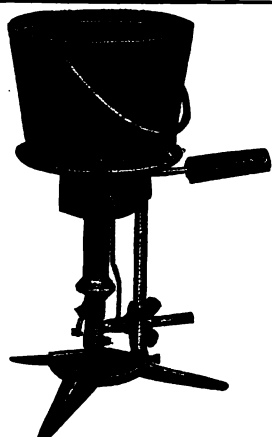
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It produces an instant heat of 1400 to 1800 degrees F., for heating metal parts, soldering irons or tools, and for tempering or annealing. The removable shield will hold a melting pot 6 inches in diameter, and will readily melt 20 lbs. of soft metal.

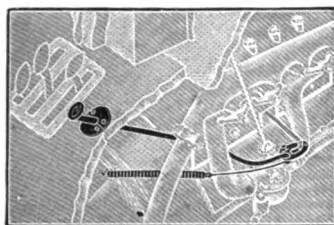
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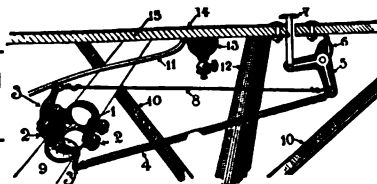
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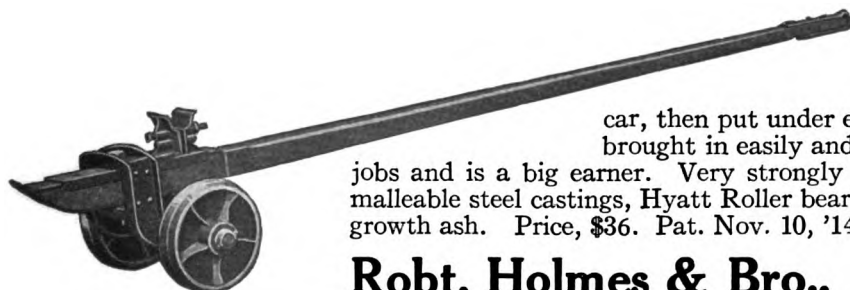
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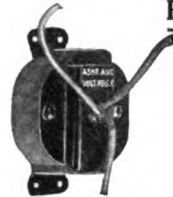
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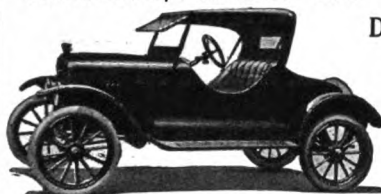
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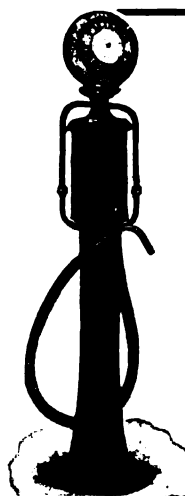
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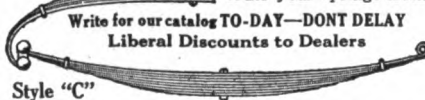
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Everready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Catelain Hose Coupling.

1446-S Indiana Ave.

Chicago, Ill.

Cylinder Grinding

Piston Rings and Wrist Pins

Welding Guaranteed

No Casting Too Heavy or Difficult

Gear Cutting, Axles and General Machine Work

IOWA NOVELTY AND BRASS WORKS

131-133 2nd Street Des Moines, Iowa

SCORED CYLINDERS

Repaired by Patented Process. Fused with our silver-nickel alloy. (Eliminates Grinding.) No warping. Same pistons fit. Reshipped 24 hours after received.

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Detroit—1246 E. Jefferson Ave.

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ACCELERATORS

Ewald Novelty Works, Oakfield, Wis.

ACCESSORIES

American Car Accessories Co., 535 W. 21st St., New York.

Aske Automatic Voltage Regulator Co., Duluth, Minn.

Atlas Auto Supply Co., 680 W. Austin Ave., Chicago.

The M. W. Dunton Co., Providence, R. I. (Radiator Cure.)

AIR COMPRESSORS

Brunner Mfg. Co., Utica, N. Y.

Globe Mfg. Co., Battle Creek, Mich.

AIR TANKS

Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

AUTOMOBILES

Elgin Motor Car Corporation, Chicago.

Olympian Motors Co., Pontiac, Mich.

Pan Motor Co., St. Cloud, Minn.

Regal Motor Car Co., Detroit.

AUTOMOBILE TRAILERS

Martin Rocking Fifth Wheel Co., Springfield, Mass.

Miami Trailer Co., Troy, Miami Co., Ohio.

AUTOMOBILE WHEELS

Nationa Wire Wheel Works, Geneva, N. Y.

AUTO LOCKS

Defender Auto Lock Co., Marquette Bldg., Detroit, Mich.

Reliance Co., 428 W. 38th St., Chicago.

Security Auto Lock Co., Chicago.

AUTO TOPS

Auto Cape Top Co., 2338 Michigan Ave., Chicago.

BALING PRESSES

Chicago Baling Press Co., Chicago, Ill.

BALL AND ROLLER BEARINGS

Bearings Service Co., Detroit, Mich.

The Norma Company of America, 1790 Broadway, New York City.

Prugn Ball Bearing Works, 1919 Michigan Ave., Chicago.

BATTERIES (Storage)

American Battery Co., 1120 Fulton St., Chicago.

Permalife Storage Battery Co., Poughkeepsie, N. Y. (Storage Batteries.)

BATTERY CHARGERS

Breco Electrical Co., 206 Huron St., Toledo, Ohio.

Hobart Bros., Troy, Ohio.

BODIES

Detroit Weatherproof Body Co., 700 Saginaw St., Detroit.

Master Body Co., Detroit.

BOOKS

American Technical Society, Chicago.

CABINETS

American Bolt & Screw Case Co., Dayton, Ohio.

CALCULAGRAPHS

Calculagraph Co., 1477 Jewelers Bldg., New York City.

CARBON REMOVERS

Adams & Elting Co., 716-26 Washington Blvd., Chicago.

CARBURETORS

Kerosene Burning Carburetor Co., 9 Selden Ave., Detroit, Mich.

Marvel Carburetor Co., Flint, Mich.

Miller Carburetor Distributors, Inc., 2351-59 Indiana Ave., Chicago.

CASH REGISTERS

National Cash Register Co., Dayton, O.

COMMERCIAL VEHICLE

Dearborn Motor Truck Co., Chicago, Ill.

Smith Form-a-Truck Co., 1470 Michigan Ave., Chicago, Ill.

COVERS

Auto Cape Top Co., 2334 Michigan Ave., Chicago.

Kennedy Car Liner & Bag Co., Shelbyville, Ind.

CYLINDER REBORING AND EQUIPMENT

Butler Mfg. Co., Indianapolis, Ind.

Iowa Novelty & Brass Works, 131-33 2nd St., Des Moines, Iowa.

Marvel Machinery Co., Boston Block, Minneapolis, Minn.

Sterling Engine Co., 331 S. Clinton Ave., Chicago.

Storm Mfg. Co., Thompson, Iowa.

Universal Tool Co., 632 Dime Bank Bldg., Detroit.

CYLINDER REBORING MACHINES

Marvel Machinery Co., Minneapolis, Minn.

DEMOUNTABLE WHEELS

Acme Demountable Wheel Co., 1200 Steger Bldg., Chicago.

Simplicity Wheel Co., Grand Rapids, Mich.

ELECTRIC BULBS

Standard Electric Lamp Works, 411 So. Sangamon St., Chicago.

ENGINES

Auto Engine Wks., St. Paul.

FORD BODIES

Master Body Co., 570 Franklin St., Detroit.

FUEL ECONOMIZERS

Willard Company, South Bend, Ind.

GARAGE BOOKKEEPING SYSTEMS

Accurate System & Manfolding Co., 22 Beekman St., New York.

Thomas J. Harton & Co., Inc., 212 Church St., New York.

GARAGE EQUIPMENT

Greb Co., 194 State St., Boston, Mass.

Romort Mfg. Co., Seattle and Chicago.

United Engine & Mfg. Co., Hanover, Pa.

Universal Industrial Corp., Hackensack, N. J.

K. R. Wilson, 1018 Main St., Buffalo, N. Y.

GAS FURNACES

Johnson Gas Appliance Co., Cedar Rapids, Ia.

GASOLINE STORAGE AND PUMPING SYSTEMS

The American Oil Pump & Tank Co., Cincinnati, Ohio.

Guarantee Liquid Measure Co., Farmers Bank Bldg., Pittsburgh.

Milwaukee Tank Works, Milwaukee, Wis.

Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

GASOLINE TANKS

The American Oil Pump & Tank Co., Cincinnati, Ohio.

Guarantee Liquid Measure Co., Farmers Bank Bldg., Pittsburgh, Pa.

Milwaukee Tank Works, Milwaukee.

Wm. B. Scaife & Sons, Oakmont, Pa.

Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

GEARS

Bailey Non-Stall Differential Corp., 1124 Michigan Ave., Chicago.

William Ganschow Co., 1002 W. Washington St., Chicago.

HEATERS

D. C. Hughes & Co., 4642 Ravenswood Ave., Chicago.

Willard Company, South Bend, Ind.

HOOD LACING

H. L. Lacing Co., 136 W. 3rd St., Cincinnati, Ohio.

HYDRAULIC PRESSES

Lourie Mfg. Co., Springfield, Ill.

LATHES

Marvel Machinery Co., Boston Block, Minneapolis, Minn.

LUBRICANTS AND OILS

New York Lubricating Oil Co., New York City.

Standard Oil Co. (Indiana), Chicago, Ill.

OIL PUMPS AND TANKS

H. M. Boe Co., 2416 University Ave., S. E., Minneapolis, Minn.

Milwaukee Tank Works, Milwaukee, Wis.

Wm. B. Scaife & Sons, Oakmont, Pa.

PAPER PRESSES

Chicago Baling Press Co., 305 S. La Salle St., Chicago.

PISTONS

American Machine Products Co., Marshalltown, Iowa.

PISTON RINGS

Burd High Compression Ring Co., Rockford, Ill.

Butler Mfg. Co., Indianapolis, Ind.

Inland Machine Works, 817 Mount St., St. Louis.

Keys Piston Ring Co., 3008 Olive St., St. Louis.

Metal Products Co., St. Louis.

Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.

PUMPS

The W. H. Howell Co., 10 State St., Geneva, Ill. (Jensen Tire Pump.)

J. H. Haney & Co., Hastings, Neb.

RADIATORS

Detroit Auto Radiator Co., 180 Fifth St., Milwaukee, Wis.

RADIATOR COVERS

H. M. Mfg. Co., 122 So. Michigan Ave., Chicago.

SHOCK ABSORBERS

Phillip H. Webber & Co., Hoopeston, Ill. (W. & C.)

SIGNS

Commonwealth Edison Co., 72 W. Adams St., Chicago, Ill. (Federal Electric Signs.)

Flexume Sign Co., Niagara St., Buffalo, N. Y.

SOLDER

Chicago Solder Co., 213 No. Union Ave., Chicago, Ill.

SOLDERING FLUX

M. W. Dunton Company, Providence, R. I.

SPARK PLUGS

D & D Co., 20 E. Jackson Blvd., Chicago.

Tungsten Mfg. Co., Marshalltown, Iowa.

SPRINGS

American Auto Products Co., 1120 So. Michigan Ave., Chicago.

Auto Spring Repair Co., 1331 Jackson Blvd., Chicago.

Garden City Spring Works, 2300 Archer Ave., Chicago.

Harvey Spring & Forging Co., Racine, Wis.

Jenkins Vulcan Spring Co., 1403 Chestnut St., St. Louis.

STARTERS

Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

STORAGE OUTFITS

American Oil Pump & Tank Co., Cincinnati, Ohio.

Milwaukee Tank Works, Milwaukee.

Wm. B. Scaife & Sons, Oakmont, Pa.

Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

TESTING INSTRUMENTS

Weston Electrical Instrument Company, Newark, N. J.

TIME STAMPS

Automatic Time Stamp Co., 161 Congress St., Boston.

Bird Equipment Co., 324 W. Ohio St., Chicago.

Calculagraph Co., New York.

TOWING EQUIPMENT

Consolidated Motors Co., 955 Chamber of Commerce, Detroit, Mich.

TRUCK UNITS

Dearborn Motor Truck Co., 1228 So. Campbell Ave., Chicago.

Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.

TRUNKS

Kamlee Co., 440 E. Water St., Milwaukee, Wis.

VALVES

A. Schrader's Son, Inc., 788-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valve).

Romort Mfg. Co., Seattle, Wash.

VULCANIZERS

Vanderpool Vulcanizing Co., Springfield, Ohio.

WATER CIRCULATORS

Crum-Wiley Co., Peru, Ind.

WELDING APPARATUS

Bermo Supply Co., Omaha, Neb.

St. Paul Welding & Mfg. Co., 173 W. 3rd St., St. Paul, Minn.

Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		I	
Accurate System & Manifold- ing Co.	61	Imperial Brass Mfg. Co.	—
Acme Demountable Wheel Co.	—	Inland Machine Works.	—
Adams & Elting 47		.....Inside Back Cover	
Advance Automobile Accessor- ies Corp.	62	Iowa Novelty & Brass Wks.	59
American Battery Co.	58		
American Bolt & Screw Case Co.	57		
American Machine Products Co. 51			
American Oil Pump & Tank Co., The 4			
American Technical Society.	—		
Aske Automatic Voltage Regu- lator Co.	57		
Atlas Auto Supply Co.	59		
Auto Cape Top Co.	58		
Auto Engine Works 58			
Auto Parts Co. (St. Louis)	58		
Auto Salvage Co.	58		
Auto Spring Repair Co.	59		
Automatic Time Stamp Co., The 52			
Auto Wrecking Co.	58		
Automobile Accessories Co.	58		
B		J	
Bailey Non-Stall Differential Corp.	—	Jenkins Vulcan Spring Co.	54
Baird Equipment Co.	57	Johnson Gas Appliance Co.	55
Bearings Service Co.	59		
Bermo Co., A. J.	54		
Boe Co., H. M.	61		
Breco Electrical Co.	45		
Brunner Mfg. Co.	4		
Buettner, Chas. H. Co.	—		
Burd High Compression Ring Co.	—		
Butler Mfg. Co.	58		
C		K	
Calculagraph Co.	—	Kamlee Co., The.	59
Catelsin, Andre G.	59	Kennedy Car Liner & Bag Co. 59	
Chicago Baling Press Co.	57	Kerosene Burning Carburetor Co.	—
Chicago Solder Co.	53	Keys Piston Ring Co.	56
Commonwealth Edison Co.	—		
Consolidated Motors Co.	54		
Crum-Wiley Mfg. Co.	50		
D		L	
D & D Co.	57	Lawrence & Co., L.	59
Defender Auto Lock Co.	56	Lourie Mfg. Co.	56
Detroit Auto Radiator Co.	58		
Detroit Weatherproof Body Co.	3		
Dunton Co., M. W.	57		
E		M	
Electrical Testing Co.	58	Marvel Carburetor Co.	48
Elgin Motor Car Corp.	52	Marvel Machinery Co.	—
Ewald Novelty Works.	55	Martin Rocking Fifth Wheel Co.	—
F		Master Body Co.	59
Federal Sign System (Electric) —		Metal Products Co.	56
Flexlume Sign Co. ....Back Cover		Miami Trailer Co. ....Front Cover	
G		Miller Carburetor Distributors, Inc. ....Inside Front Cover	
Ganschow, William 50		Milwaukee Tank Works.	49
Garden City Spring Works.	59		
Globe Mfg. Co.	6		
Graham Roller Bearing Co., The 56			
Greb Co., The.	—		
Greer College of Motoring.	59		
Guarantee Liquid Measure Co. 59			
H		N	
Haney & Co., J. H.	45	National Cash Register Co.	41
Harton & Co., Inc., Thos. J.	51	National Rubber Filler Co.	48
Harvey Spring & Forging Co.	43	National Wire Wheel Works.	8
Heinz, J. O. Co.	—	New York Lubricating Oil Co.	52
Heiser Special Tool Co.	56	Norma Company of America, The 7	
H. M. Manufacturing Co.	—		
Hobart Bros.	47		
Holmes & Bros., Inc., Robert.	55		
Howell Co., The W. H.	56		
Hughes & Co., D. C.	—		
I		O	
		Olympian-Motors Co.	59
J		P	
		Pan Motor Co.	49
		Pondelick Bros.	53
		Pruyn Ball Bearing Works.	57
K		R	
		Regal Motor Car Co.	5
		Reliance Co.	52
		Romort Mfg. Co.	54
		Ross-Gould 52	
L		S	
		St. Paul Welding & Mfg. Co.	59
		Salter Motor Mfg. Co.	59
		Scaife & Sons Co., Wm. B.	54
		Schrader's Son, Inc., A.	53
		Security Auto Lock Co.	—
		Simplicity Wheel Co.	43
		Slocum, Avram & Slocum.	56
		Smith Motor Truck Corp.	—
		Standard Electric Lamp Wks.	39
		Standard Oil Co. of Indiana.	53
		Sterling Engine Co.	58
		Storm Mfg. Co.	51
		Sunderland Machinery & Sup- ply Co.	58
M		T	
		United Engine & Mfg. Co.	50
		Universal Industrial Corp.	54
		Universal Tool Co.	47
N		U	
O		V	
		Vanderpool Vulcanizing Co.	—
		Visible Gasoline Dispenser Co. 6	
P		W	
		Webber & Co., P. H.	50
		Weston Electrical Instrument Co.	55
		Wiggins, J. B., Co.	52
		Willard Co., The.	49
		Wilson, K. R.	57

This Bookkeeping System Saves You One-Half Your Work on Charge Accounts

and it will save you many mistakes, losses and disputed accounts. A large number of successful Garages, Repair Shops and Accessory Dealers are now using the

"AKKURATE" Self-Indexing Ledger Statement

One entry does all your bookkeeping, day book, journal and monthly statements. A final entry at close of month completes your ledger record.

It's simple, requires no experts, as a matter of fact, you can be your own bookkeeper with our system.

The System is Self-Indexing. Get that—S-E-L-F I-N-D-E-X-I-N-G. You do not have to "hunt and hunt" for an account.

Send for Free Sample

We have just completed a miniature "AKKURATE" System that shows in detail the short-cut, efficient and money-saving plan. Write for a copy and see how it will help you.

(Garage Dept.)

Accurate System & Manifold Co., Inc.
12 Elm Street New York City



Any barrel is now
a portage Self-
Measuring Tank
with the BOE
**Automatic
OIL PUMP**

No funnels. No waste. Only clean oil cleanly delivered. Fits any style 25 to 60 gallon steel or wood barrel. Measuring graduated to $\frac{1}{4}$ pint. Will pass state inspection.

Literature and prices on request.

**H. M. BOE
CO.**

2416 University Ave., S.
MINNEAPOLIS, MI'



\$3
per set of 3

Saves Ford Rear End

Rear end trouble! That's a big bugaboo with Ford owners. One of the chief contributing causes is inefficient transmission lining. It gets hard and polished—then grabs and slips—and *then there's trouble to pay*. The Ford comes to a stop amid heavy vibration and noisy chattering. The back end vigorously jumps up and down. The *direct shock* of this vibration is communicated through the drive shaft and gearing to the rear axle. No mechanism can stand such strain indefinitely. Rear end trouble is the *natural result*. Cork Insert Transmission Linings stop the grab and slip—eliminate the chatter and permit velvety smooth transmission action. They *save* the Ford rear end—prolong greatly the life and efficiency of the car. This alone would make the use of these linings economical and advisable. In addition they outwear two to three sets of ordinary linings.

A Non-Slip Fan Belt for Fords

Cork Insert Products Exhibited at New York and Chicago Shows



One Dollar
for 1917 Fords
85c for preceding models

Authorities say that up to 50% of the "drive" goes to waste from slippage in the ordinary Ford fan belt. It gets so hard and glassy that the fan speed is reduced, the engine is not properly cooled and overheats. Cork Insert Fan Belts do not slip—they keep the fan faning, keep the engine cool, are very long lived and economical.

Advance Automobile Accessories Corporation

Dept. B7-1

56 East Randolph Street
Chicago

Dealers:

Order Cork Insert Transmission Linings and Fan Belts from your jobber. Ask him how Cork Inserts are moving. He will tell you they are a **BIG WINNER**. Stock them—recommend them—push them. They will make you a lot of profit.

Dealer's Coupon Check and Mail today

Advance Automobile Accessories Corporation
Dept. B7-1 56 E. Randolph St., Chicago

- ☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.
(Regular dealer discounts to apply.)

Name.....

City..... State.....

Jobber's Name.....

**No
gap!**

Gas cannot get
through or past
the Inland.

**Expands
in a perfect
circle**

against the cylinder
wall, making a
complete seal.

**It seats
quickly**

because the ellip-
tical ends are
bent in.

The Inland is
not only mechanically
perfect, but its simple one-
piece construction allows a
low selling price, so that dealers
can save car owners \$5 to \$10 per
set over any other type of gas-tight
piston ring. This exclusive combination
of advantages featured in our full pages
and half page ads in

**The Saturday Evening Post
Literary Digest Collier's**

is making the Inland the biggest seller
everywhere — already 1,250,000 in use.

INLAND

1 PIECE PISTON RING

If you are not handling Inlands, you are not
getting the big business that would come
to you if you had the Inland sign on
your store. *Get! it there.*
Write for our proposition
today.

Inland Machine
Works,

817 Mound St.
St. Louis,
U. S. A.



**Low
priced**

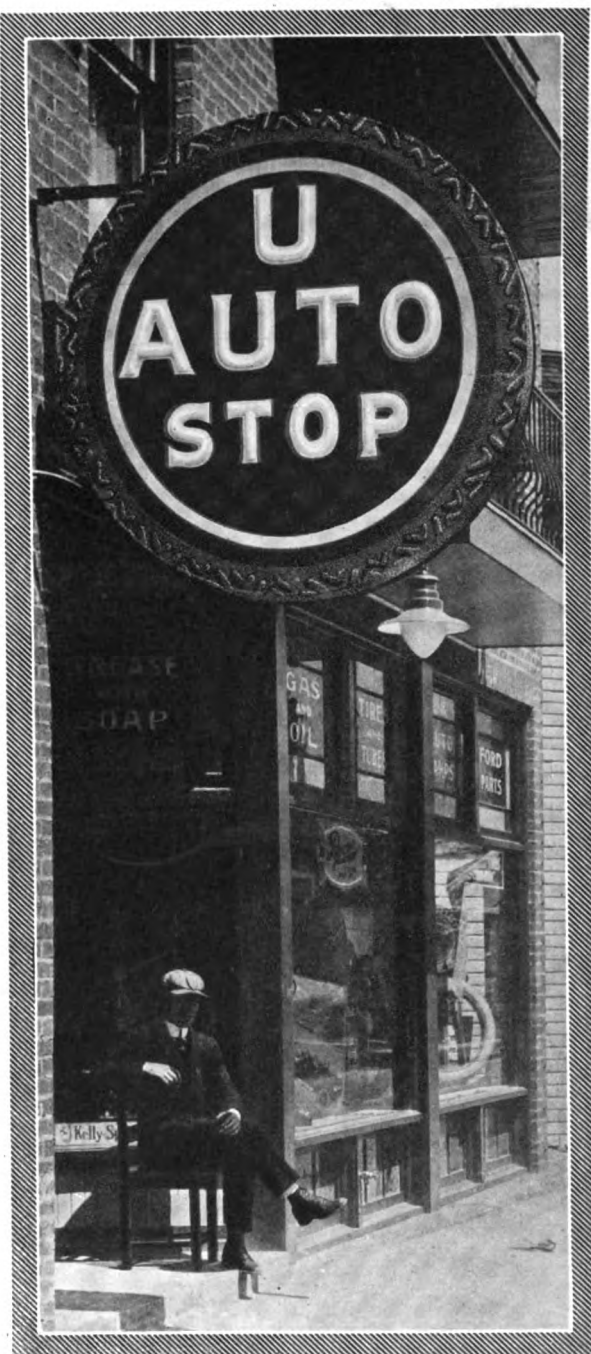
because of its sim-
ple one-piece
construction.

**Its
Spiral Cut
is patented—**

its advantages cannot
be duplicated in any
other ring at *any*
price.

**Strongest
and most
durable**

because equal width
and thickness
all around.



Put Your Mark on the Street—

A Flexlume sign above your door cannot be missed—it will bring your name and your business to the notice of passing motorists.

That is one way progressive dealers and garage men are getting business—they use electrical advertising. The greater the number of people who know your location the more business will come to you.

Flexlumes are both day and night signs—they work for you twenty-four hours a day—clear cut, raised white letters standing out from a dark background.

When illuminated, Flexlumes give maximum brilliancy and by day the strong attention-pulling designs cannot be overlooked. Other signs seem weak beside them. Flexlumes have greater reading distance.

There is no excuse for that dark store front. A Flexlume will make it brilliant and attractive. Lack of cash is no excuse, for Flexlumes can be bought on easy terms.

Send in this coupon and get the Flexlume book, "Twenty-four Hours a Day," and a sketch showing how **your** sign will look.

THE FLEXFLUME SIGN CO.

Potomac Ave. and Niagara Street

BUFFALO, N. Y.

Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.
Pacific Coast Distributors: Electrical Products Corporation,
941 West 16th St., Los Angeles, Cal.

FLEXLUME SIGN CO., Buffalo, N. Y.

Please send me free sketch and information in regard to Flexlume Signs.

Signs should read, illuminated.....

.....
Wording not illuminated.....

To read one or two sides?.....

Vertical or horizontal?.....

NAME

ADDRESS

A. G. & A. D.

AMERICAN GARAGE & AUTO DEALER



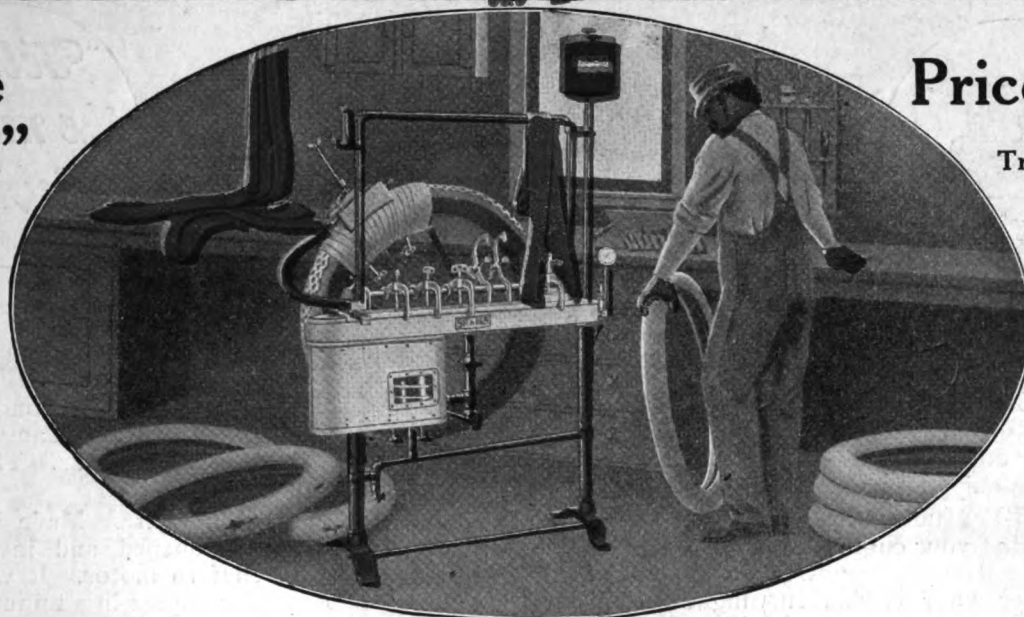
Volume 9
Number 3

CHICAGO

MARCH, 1918

31.00 Per
Year

Type
"NPR"



Price **\$70.00**
(Subject to
Trade Discount)

SHALER Vulcanizer

For Repair Shops and Garages

Successful results are certain with the SHALER Vulcanizer. You don't need experience—just follow instructions—to turn out perfect jobs.

By the new SHALER Wrapped-Tread Method, casings are mended quicker, better and at less cost to you than with other vulcanizers using the old method. The SHALER Vulcanizer has thermostatic heat control, which regulates the temperature automatically.

This makes an explosion impossible, prevents overheating or undercuring the tire—and leaves you free to devote your entire time to repairing.

Any style or size of casing or tube can be repaired. The SHALER Vulcanizer occupies no more space than a bicycle, and can be moved about easily. Equipped for gas, gasoline or electricity to suit your shop.

Large Capacity—Tubes and Casings

The SHALER Vulcanizer is absolutely high grade—designed for practical vulcanizing and intended for large volume of work. With it you can do the same amount of work as with vulcanizers costing several times as much—and the quality of work it does is even better than the work done by higher priced vulcanizers.

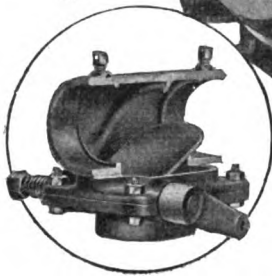
It handles six tubes and one casing AT ONE TIME—a total of 200 tubes and 12 casings in eight hours. Figure out what this daily capacity of the SHALER Shop Vulcanizer will mean! Consider the handsome profits it will **earn** for you—every day in the year!

Ask Your Jobber or Write for Catalog

and full information about the SHALER Complete Line of steam, gas, gasoline and electric Vulcanizers for Garages and Repair Shops. Don't put it off—write now. The Complete SHALER Line Includes Gasoline, Gas, Steam and Electric Vulcanizers.

C. A. Shaler Co., 353 Fourth St., Waupun, Wisconsin

Sectional view,
showing pat-
ented gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

Locate your little power leaks

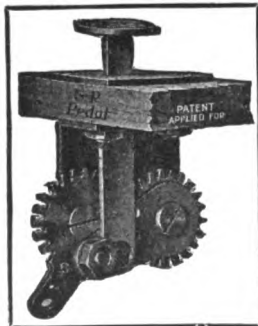
Do you really know what your motor is doing? Can you tell the minute a cylinder is laying down on the job? Or do you wait until it is skipping badly?

The G-P Muffler Cut-Out shows up clearly just what your engine is doing. It enables you to save power, and power is costly. It helps to keep your engine running sweetly, and adds a new pleasure to driving. It shows up the little losses that take the edge off power.

Note that it is made simple and strong. The G-P Muffler Cut-Out opens at an angle that permits the freest escape of gas. There is no back-pressure.

Carbon will not accumulate. Made in two parts to be readily opened and inspected. Gives complete relief to motor. It will tell you more about your engine in a minute than you can learn from a month of ordinary driving.

The G-P MUFFLER CUT-OUT and G-P PEDAL



The G-P Pedal is made entirely of steel, and is strong enough to operate any cut-out spring. The geared compound leverage makes it easy to operate. Compounding of leverage and geared parts allows installation in minimum space. Its installation requires but one small hole drilled in floor board. The

locking device is on the bottom plate, so the pedal can be fastened to a steel or wood floor board of any thickness without altering its throw.

By releasing one screw the G-P Pedal can be changed to lift or pull in any direction. Operates any cut-out easily.



Sales Department

EDWARD A. CASSIDY CO., INC.,
Madison Avenue at 40th Street, New York City
Manufacturers: The G. Piel Co., Inc., Long Island City, N. Y.



Drawing Trade from Across the Street

The supply man, repair shop or garage selling gas by **visible** measure—gets the business. Can any dealer using a blind pump compete with the visible pump? Certainly not! Owners see what they buy and buy where they **can** see.



Guarantee
VISIBLE PUMP

This pump will increase sales, add repair jobs, and storage trade by bringing customers to your door. Furthermore, it does away with hand-pumping. It is automatic. Self-measuring. Positive filter. Impervious to weather. Handles any grade of gas and one or more grades. No gasoline above ground. Ideal from **every** standpoint.

Write today. Let us send full particulars regarding this big business builder.

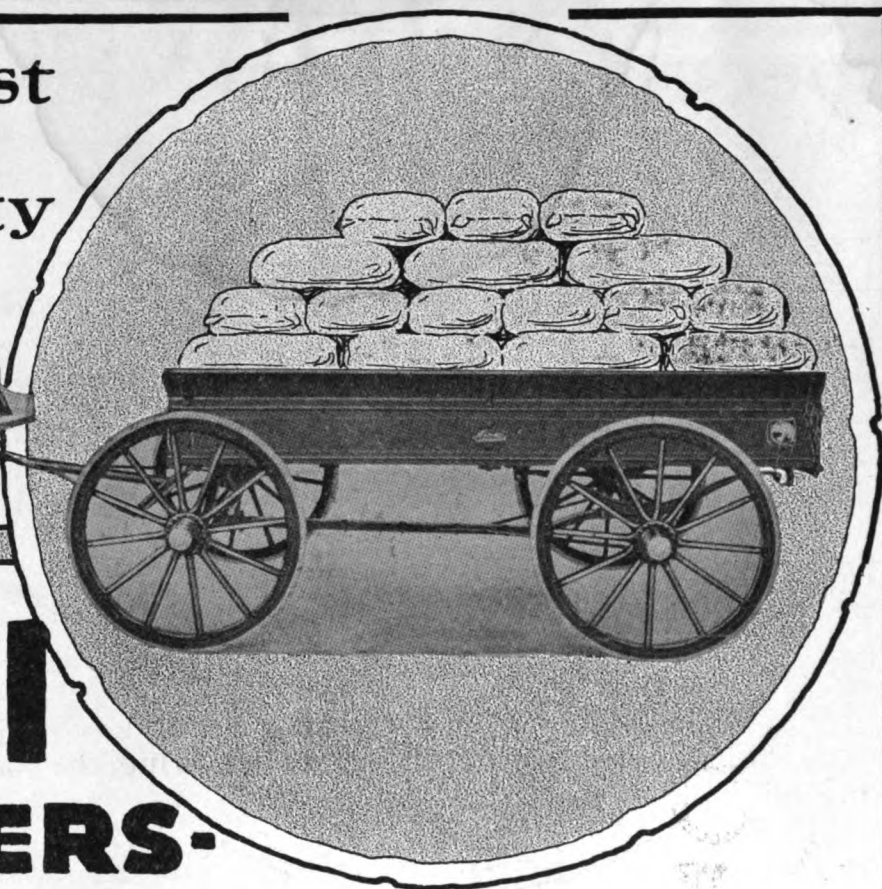
HEPBURN WALKER, DISTRIBUTOR

Guarantee Liquid Measure Co.

Farmers' Bank Building

Pittsburgh, Pa.

**Your Biggest
War Time
Opportunity**



MIAMI TRAILERS-

**The cost of labor, motor trucks and all equipment is still advancing
The problem of hauling costs is a serious one to every business man**

There are merchants and manufacturers in your community whose hauling equipment is not sufficient, but who hesitate to invest extra capital in motor trucks.

The Miami Trailer solves this problem. Every one in use saves the cost of a truck and necessary maintenance expense.

The Miami Trailer will carry those excess loads and actually cuts truck transportation cost in half.

The Miami Trailer is built to carry heavy loads at automobile speed under nearly all conditions.

Specifications include Timken axles, Timken roller bearings, artillery wheels, oil tempered springs. Special shock absorbing draw bar positively relieves all strain on the car.

DEALERS—Every merchant, contractor, manufacturer, telephone company, farmer and many others are live prospects for Miami Trailers. There are big profits in the trailer business waiting for you. Grasp them. We will give you restricted territory and show you how to sell these prospects and make large profits.

You will be pleased with our special dealer's co-operative plan, for it gives you a wonderful opportunity to build a profitable trailer business of your own.

Write us at once for details.

The Miami Trailer Company
TROY, OHIO

Specially Priced While They Last

Specifications

Heavy sheet iron framing, glass panels with any moderate amount of wording, wired complete with six sockets, standard hanging rig included.



Size

61 inches long, 25 inches wide.

Price

With top panels . . . \$50.00 net

Without top panels \$47.00 net

You can secure for the next thirty days this compelling, attractive electric sign at a special price. These signs are brand new and built up to Federal standard, which means that in purchasing one, you are securing the maximum in electrical advertising efficiency for the minimum in actual cost.

The very nature of the Garage business makes an electric sign an absolute necessity. Without proper identification marks, your building is, from a distance, either by night or day, just the same as its neighbors. To the passing motorist who finds himself suddenly in need of gas, supplies or repairs of any nature, your building must be made to stand out for what it is.

There is no substitute for the electric sign. Projecting from your building, by day it makes a clearly legible mark of identification. By night, its attention-compelling rays are visible for considerable distance. All the trade within its vision is yours.

Install the Right Kind of a Sign

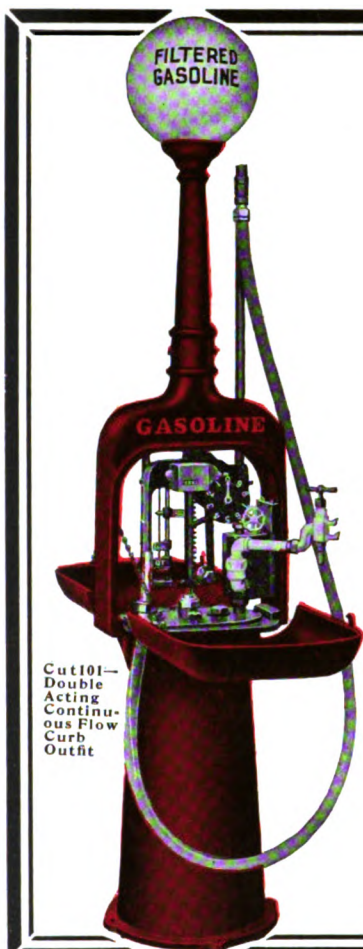
The Federal Electric Sign is constructed by skilled and experienced artists and workmen, built to compel attention and attract business and to last. Our Service Department is at your disposal. We design all types of signs. A request for a sketch and specifications places you under no obligation whatsoever. Write to us today.

FEDERAL SIGN SYSTEM (Electric)

Lake and Desplaines Streets
Chicago, Ill.

BRANCHES IN ALL LARGE CITIES

Address all inquiries in the City of Chicago to the Commonwealth Edison Company,
Electric Sign Department, 72 W. Adams Street



Cut 101—
Double
Acting
Continuous Flow
Curb
Outfit

Prepare for Your Big Spring Drive on Gasoline Trade

You naturally wish to make this year a banner year for gasoline and lubricating oil sales. The realization of this aim depends largely upon equipment. Motorists patronize attractive, business-like garages that are so equipped as to give quick, efficient service. The installation of

THE AMERICAN Gasoline and Oil Storage Equipment

will make your garage inviting, distinctive, efficient—and result in increased business and greater profits for you.

Write for bulletins giving complete information, prices, etc.

SALESMEN WANTED—Good Territory Open

The American Oil Pump & Tank Co.
CINCINNATI, OHIO



Cut 36—Lubricating Oil Outfit

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air**.

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

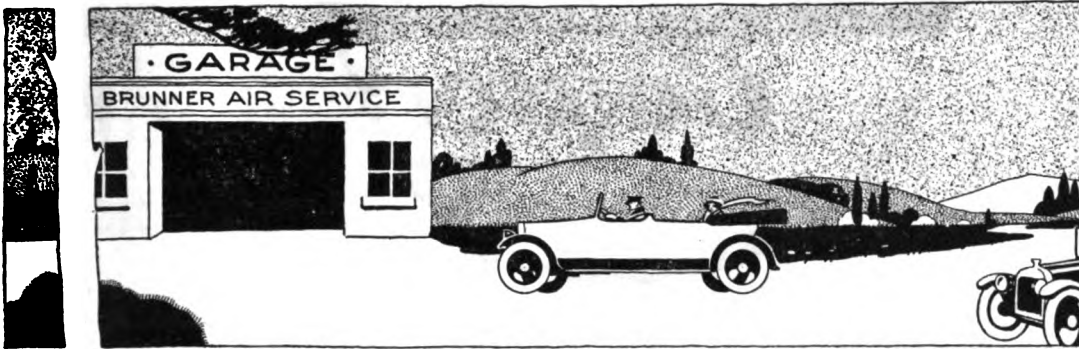
National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.

MIDLOTHIAN TEXAS.





Are You Prepared for the Big Spring Drive?

It is only a matter of a few weeks now, Mr. Garageman, when the roads will be alive with motorists eager for service, and the most important service in the early Spring is your Compressed Air Service.

WHEN "LAST SUMMER" TIRES BEGIN TO BLOW



No. 66

In the early Spring, when the boys are trying to coax more mileage out of their "last summer" tires—then is the time your compressed air supply is taxed to the utmost and—then is the time you should be in position to make a favorable impression on the motorist by having your air supply ready to meet his demands.

Is Your Compressed Air Service? Going to Pass Muster This Spring?



No. 50

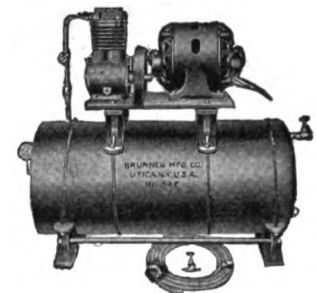


No. 17

This is a question which should be most carefully considered by you just now, Mr. Garageman, because if you do not show the motorist that you are able to deliver the goods in the Spring you are not going to make an impression such as will prompt him to return to your garage for service and supplies during the long Summer months that are to follow.

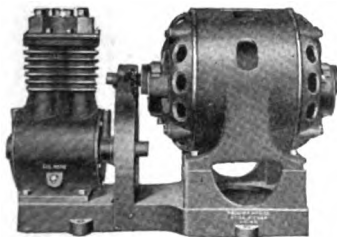
THESE ARE DAYS OF PREPAREDNESS

And those among you who prepare for the big Spring drive will taste the fruits of victory—the best way to prepare is to install a Brunner Air Compressor in your Garage.



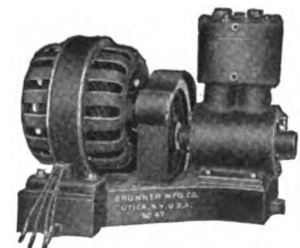
No. 542

INVESTIGATE THE **BRUNNER** AIR COMPRESSOR



No. 42

The Brunner is the pioneer of all Garage Air Compressors—it has been making good in the garage ever since the garage business has been a business—the Brunner Air Compressor is properly designed and built to suit the garageman's special requirements. No freakish attachments and no restriction of the lubrication to invite disaster but simply the same, good, substantial business proposition it has always been for the garageman who progresses with the times.



No. 47

Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner Jobber who covers your territory.



BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, N. Y.

Cincinnati Branch:
CINCINNATI, OHIO

"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies"





The Geyser Pump

keeps your customers' confidence

Install a Geyser Visible Gasoline Dispenser and not only save money, but assure yourself and customers against loss through inaccurate measurement.

The Geyser pump is simple in operation—just open valve and gasoline is forced into glass chamber until required amount is registered; open hose valve and allow gas to flow to car.

A line from compressed air tank does the work. Time and labor necessary to serve a car is less than half of that of other pumps. So simple in construction that no upkeep is necessary.

MONEY-BACK GUARANTEE

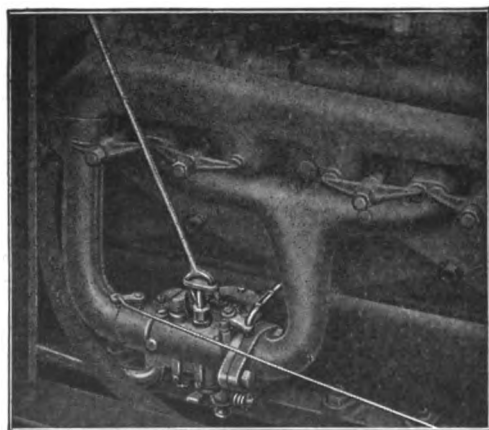
So positive are we that the Geyser will meet your requirements, all outfits are sold with a written money-back guarantee.

SAVE MONEY BY WRITING US

Write us today for complete descriptive literature—it is free and tells you how you can save money on your gasoline equipment.

The Visible Gasoline Dispenser Co.
422 FIRST AVE. PITTSBURGH, PA.

Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.

AMERICAN GARAGE & AUTO DEALER

Published Monthly

Applicant for Membership in the Audit Bureau of Circulations

TABLE OF CONTENTS

EDITORIAL		Page
Go After Your Prospects.....		24
Interest in Public Affairs Will Repay Motor Tradesmen		24
Farmers Buy Service—Not Hooks.....		24
Ohio Dealers Good Example.....		24
Farmers' Trucks Might Help Relieve Freight Con- gestion		24
Organize Truck Freight Lines.....		25
GENERAL		
Looking Ahead		11
NOW—Today Is the Time to Sell Trucks—Tractors— Accessories		12
Cash Register Head Enlists Men's Wives as Sales Aides		13
Dan Thrift, Live Garage Man, Energizes Another Operator		14-15
Planning for Years Ahead Is Foundation for Success National Dealers Offer Membership to Firms.....		16-17
Melhuish Sees Big Demand for Motor Trucks This Year		18
Effective Window Displays Possible at Small Expense Tractors a Vital Factor in War Demand for Food..		19
C. S. Rieman Heads Concern He Founded.....		20-21
Practical Motor Truck Cab Made by Pontiac Body Firm		21
Start Spring Sales Drive, Don't Wait for Business..		22
Good Show in Small Town, Oak Park Dealers Pleased		26
Your Show Profits		27
Chicago Distributor's Strong Advertisement.....		28
Accessories to Feature Oil Jobbers' Exhibition.....		29
Electric Sign Can Be Altered When Taking on New Cars		29
Vreeland Heads Truck Firm		31
Oil Fields of the United States.....		31
Car Dealer Cuts Overhead by Taking on Truck Sales Allen's Sales Manager Wins Minneapolis Bride.....		32
Hugh Chalmers Acts for Car Firms in Washington..		32
Albany Dealers' Show Produced Many Sales.....		33
Bearings Service Company Goes to Larger Quarters..		34
Ford and Maxwell Prices Are Raised.....		34
Chicago Show Re-Named; Trade Officers Elected...		34
Jenkins Spring Company Moves Plant to Indiana...		34
Big Success Rewards Dealers' Sales School.....		35
A. A. Contest Board Resumes Race Control.....		35
Ten Business Rules Good for Any Trade.....		35
Tractor Bearings Volume Issued by Hyatt Company Worn Cylinders and Pistons Cause Trouble for Owners		36
Cars Are Farm Equipment		37
Negligence of Owners Blamed for Car Thefts.....		37
The Salesman's Prayer		37
Making Trucks Last Longer		38
Rendering Profitable Service		44
Garageman's Creed		46
Pay Up Days		46
Solderings Kinks for Repairmen		48
What Is the Form-a-Tractor Attachment?.....		50
DEPARTMENTS		
How to Make the Shop Pay.....		28
Welding, Cutting and Brazing		30-31
Mechanical and Engineering Problems		33
Accessories and Garage Equipment.....		39-40-42
Buyers' Reference		60
Index to Advertisers		61

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"NORMA"

BALL BEARINGS

(Patented)

Performance must be built into a machine—it is a thing inherent, not alone in the machine as a whole, but also in every part, every construction detail. Failure of a so-called minor part or minor detail, impairs machine performance as surely as a break-down of the machine as a whole.

Failure of ignition or lighting system may result from a failure of a bearing in magneto or lighting generator. To safeguard against which, makers of these electrical accessories of the highest grade—of maximum performance capacity—have standardized on "NORMA" Ball Bearings.

Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.





For New Cars—and Old

Don't risk your new cylinders with poor oil. See that the lubricant you buy is the *best*. A new motor requires *more oil* than a used motor. If the crank case be cleaned out and refilled with Polarine at 300, 700, 1000 and then every thousand miles thereafter, you will find the cost of operation greatly reduced.

*For Any
Make Car*

Polarine
THE PERFECT MOTOR OIL

*At Any
Motor Speed
or Tem-
perature*

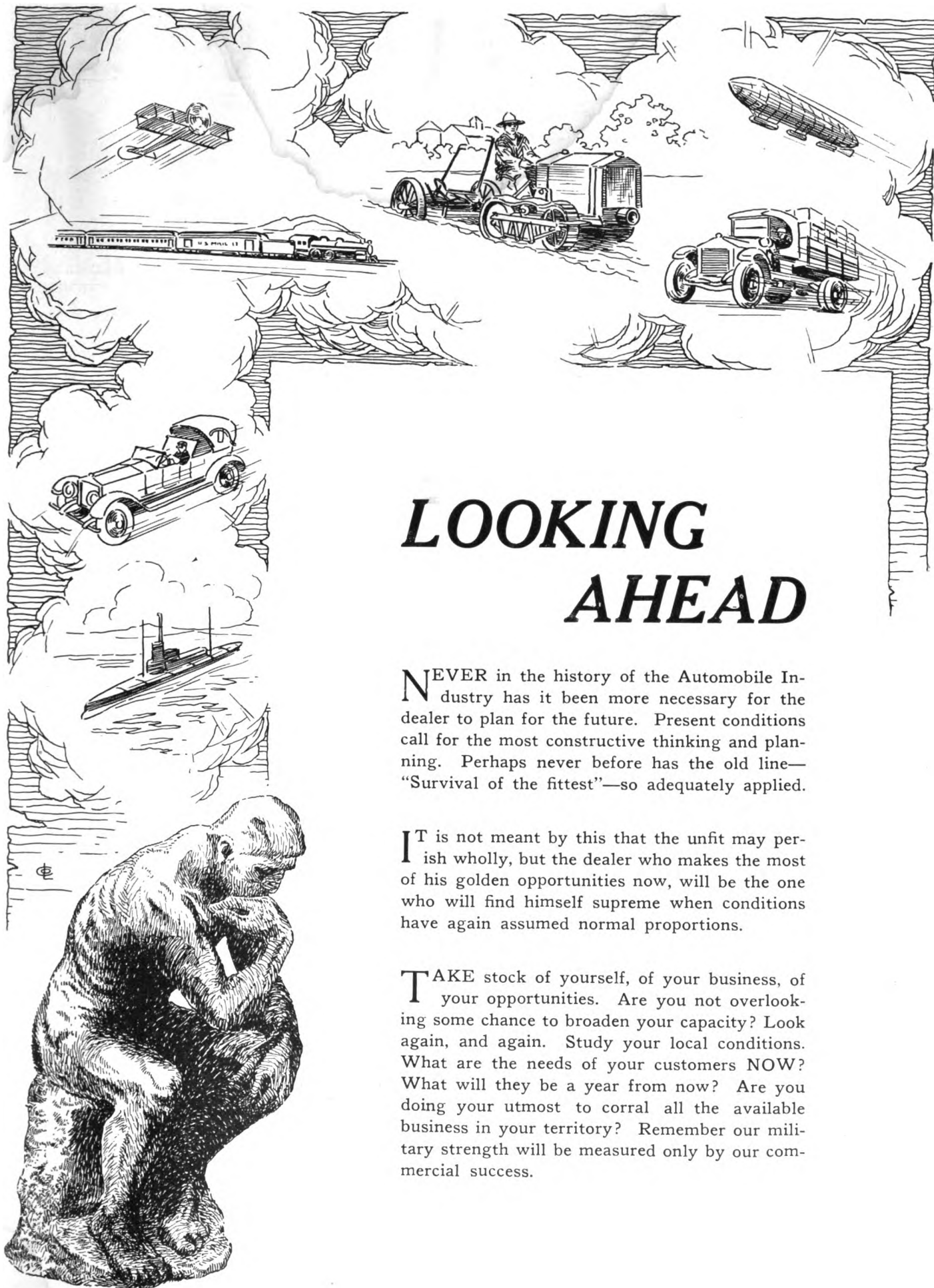
It minimizes carbon deposit on the piston and in the combustion chamber. It minimizes friction, thus reducing the wear and tear on bearing surfaces. It possesses maximum power of adhesion to bearings and cylinder walls.

Under driving conditions, where the temperature of cylinder walls ranges from 300 to 400 degrees Fahrenheit, the viscosity of Polarine is practically identical with that of so-called heavy oils.

Polarine oils and greases for all motor lubrications are used by nearly a million motorists.

For old, worn engines we recommend Polarine heavy (not cold tested.)

Standard Oil Company, (Indiana) 72 West Adams Street, Chicago, U.S.A.



LOOKING AHEAD

NEVER in the history of the Automobile Industry has it been more necessary for the dealer to plan for the future. Present conditions call for the most constructive thinking and planning. Perhaps never before has the old line—"Survival of the fittest"—so adequately applied.

IT is not meant by this that the unfit may perish wholly, but the dealer who makes the most of his golden opportunities now, will be the one who will find himself supreme when conditions have again assumed normal proportions.

TAKE stock of yourself, of your business, of your opportunities. Are you not overlooking some chance to broaden your capacity? Look again, and again. Study your local conditions. What are the needs of your customers NOW? What will they be a year from now? Are you doing your utmost to corral all the available business in your territory? Remember our military strength will be measured only by our commercial success.

AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX. No. 3

New York — CHICAGO — Detroit

March, 1918

NOW TODAY IS THE TIME

Automobile Dealers Must Arrange Quickly to Sell TRUCKS—TRACTORS— ACCESSORIES Because of Curtailed Passenger Car Output

Faced by radical curtailment in the supply of the product from which their profits are derived—a cut in passenger car production ranging from the minimum of 30 per cent to 50 per cent in one specific case—American automobile tradesmen must make provision TODAY for other lines to fill the gaps in their sales totals. The Ford output has been cut in half.

NOW—Today, is the time when arrangements should be made by passenger car dealers to sell trucks, tractors and accessories. There is a big demand for all of these.

The troubles of the railroads, the demands of the army and of the farmers for horses are forcing an ever growing number of concerns to utilize motor trucks for transportation purposes. This applies both to the delivery of small, light packages in cities and towns as well as to the carrying of heavy and bulky merchandise from one city to another.

The same condition with regard to horses which makes the employment and increased use of trucks a vital necessity also helps make a ready market for tractors. Thousands of manufacturing concerns as well as producers of raw materials such as

ores or lumber will be forced to employ tractors in the near future because they will not be able to obtain the big, heavy horses which they have used in the past.

Passenger Car Making Cut 30 Per Cent.

Some time ago, representatives of several of the largest automobile manufacturing concerns in the industry were called to Washington, at the request of the War Industries Board and the Fuel Administration, to discuss the situation and determine to what extent further assistance might be rendered and the government needs supplied.

A careful review of the situation, covering a period of several weeks (the automobile manufacturers co-operating with the government to the fullest extent), resulted in the National Automobile Chamber of Commerce, composed of 117 automobile manufacturers, at its meeting in New York March 7, proposing a voluntary 30 per cent reduction in the uncompleted schedules of passenger cars for the present fiscal year.

A great many tractors that were designed primarily for agricultural uses can be very well utilized as mechanical horses around manufacturing plants. As a matter of fact, tractors can do more work than horses

and are also able to work under conditions around foundries or blast furnaces that would be very hard on horses.

There are many practical types of tractors on the market, and, unlike the passenger car makers, the tractor manufacturers are planning for a greatly increased output this year. So it is safe to say that by making contracts quickly the automobile tradesmen will be able to obtain an adequate number of tractors to supply his customers.

So far as accessories are concerned they afford one of the quickest and most logical ways of making up for the absence of new passenger vehicles to sell. The thousands of present car owners who would have bought new ones had the production not been cut down so much will have to be content with their old machines.

While new bodies can hardly be termed accessories it is a fact that a good deal of business in new and special coachwork can be had by a live automobile merchant who acquaints himself with the profit possibilities in this line. There are a number of makers of special bodies who will be glad to co-operate with them in getting this business.

Cash Register Head Enlists Men's Wives as Sales Aides

Holds Big Convention for Women at Dayton Plant and Makes Some Fine Suggestions

Every automobile dealer and garage owner who employs salesmen—and all of them should be so, or act as their own salesmen—will find many good ideas which can be adapted to his own business in a set of eight suggestions formulated by John H. Patterson, head of the National Cash Register Company. He was one of the first great merchants to realize the benefit of gathering his salesmen together in conventions and recently he introduced a new and striking development of this idea—he called a convention of the WIVES of his salesmen.

The motto adopted for the gathering was "With your help he can succeed." Business talks were made by

President Patterson and other executives of the company, as well as addresses on various subjects by well known men and women from various parts of the country. Motion pictures, stereopticon slides, playlets, pageants and actual sales demonstrations were used to bring home to the visitors their importance to their husbands in business.

The company published a specially gotten up and illustrated "Women's Convention Edition" of its paper The N. C. R. The entire back page was devoted to the following suggestions:

Things the Wife of an N. C. R. Salesman Can Do to Help Him Be More Successful in His Business

Eight Important Ways in Which She Can Make Him More Efficient

Prepare Plenty of Wholesome Food for Him.

Good food well cooked is necessary to health. A salesman should get the proper amount of nourishing food to keep him in condition for a hard day's work every working day of the year. He should not eat too much, but enough, and his meals should be eaten under pleasant conditions.

See That He Gets Enough Sleep at Night.

One of the essentials to success is sleep. Wives should see that their husbands sleep at least eight hours every night in a comfortable bed, in a well-ventilated room. Sleep is the best restorer of mind and body. It gives a man a fresh start every morning; it makes every day a new beginning.

Start Him to Work Early In the Morning.

Every hour of the day should be used to advantage. A salesman can work best in the morning when his brain is clear and should always start out early. He should spend as much time as possible in the presence of prospective purchasers. The more prospects he interviews during the day, the more sales he will make.

Help Find Simple Words for Demonstration.

Simple language should be used in the demonstration. A wife should have her husband demonstrate a register to her, and point out to him where he should use short words that can be understood by anybody. Good sales are lost because agents use words that prospects don't understand.

Always Be On the Lookout for Good Tips.

Women buy 80 per cent of all the goods sold in retail stores. Wives of salesmen can study these stores to find the troubles of the merchants, explaining to their husbands the systems used. This information will be valuable when these merchants are approached to install a register.

Ask for a Receipt With Every Purchase.

The wife of a salesman can help him by asking for a receipt every time she buys anything at a retail store, no matter how small the amount of money spent. She should report to her husband the stores that fail to give her a receipt in order that he may investigate the systems used by these merchants.

Don't Take Him Away From His Work.

Often a salesman must demonstrate a register after business hours. This may keep him from going to the theater or to a social function with his wife. She should sacrifice in order that he may keep an appointment with a merchant at an unusual time. The prospect's convenience is of first importance.

Encourage Him When Ready to Give Up.

When a salesman gets the "blues," his wife can do more to encourage him than anybody else. She should study his weaknesses. She should read N. C. R. literature and call his attention to good articles. Help like this from his wife has kept many an N. C. R. man going when he was tempted to give up.

"The wife of an N. C. R. salesman should understand his business thoroughly, and be able to help him in every way possible."—*President Patterson.*

Dan Thrift, Live Garage Man, Energizes Another Operator

Makes Him Clean Up His Place, Install a Sign and Take Agencies for Trucks and Tractors to Sell to Farmer Customers

When Dan Thrift read the "For Sale" advertisement of a garage in the "Daily Bulletin" of Lueville, he consulted his bank book, smiled, told one of his mechanics to run out old Betsy, and was off to see what Dame Fortune had to offer him this time. Dan knew Lueville was a dandy automobile town, being a thriving place of about 10,000 people and surrounded by prosperous farmers.

After a pleasant cross-country ride and a few inquiries in Lueville he succeeded in locating the "For Sale" garage. Parking his roadster he surveyed the garage from across the street, and mused:

"No wonder it's for sale; who in the name of all that's great would ever go into that dump for anything, unless they had smashed their Lizzie within a half block of it?"

However, Dan mentally calculated the cost of putting the front of the building in order and decided that it was worth investigating.

Upon entering the garage and not finding any one in he proceeded to take a hurried inventory of the scattered stock of accessories, tires, repair parts, etc., which chiefly occupied what he supposed was intended for the office, but which reminded him of a Ford he once saw which had been hit by the B. & O. Dan was visibly disappointed at the outlook. He was about to turn and leave when some one disturbed his thoughts by announcing himself:

"Gas, mister?" Then as Dan turned: "Why, hello, Dan; where did you come from, and why all dressed up like a minister? Ain't you in the garage business any more?"

"Well, Dick, it's good to see you again," Dan answered. "Let's see, the last time I saw you was when I was fired from the Main Garage for making too many suggestions to Old Man Miller. He said I thought I was running the place. Guess he was right, for when I saw he was not running it, I dug in."

"Sure, I'm in the garage business—best business ever—making lots of money. Come over here today to buy this place, if I could get it cheap enough. Who owns it?"

Was Sick of Bargain.

"I do," said Dick, "but am sick of the bargain. No money in the garage business here, Dan. Got to sell out and find something else."

"So you own this place, do you, Dick? Didn't know what had become of you. Tell me what you have been doing since we used to pump gas together."

"Well," said Dick, "I worked for Old Man Miller until he had to close up, and as I had saved up a few hundred

dollars, thought I would like to own a garage of my own. I bought this place about a year ago and paid down all I had. Thought it was a pretty good town for a garage, but guess I picked a lemon. Have not made a cent; in fact, I have lost money."

"So now you want to sell out and quit the garage business?"

"Yes," answered Dick, "guess there ain't no money to be made in this business any more with the hardware, grocery and dry goods stores, and even Woolworth selling automobile supplies. About all the motorist wants with a garage these days is just a place to get free air, gas and what repairing he has to have done. Do you really want to buy a place, Dan, and especially this one since I have told you it's no good?"

"No," said Dan, "I want you to keep it and make some money for yourself. I want to see you get your eyes open. Why, you know as much about running a garage as I do about knittin', and that ain't much. This place can be made a mint if you will just put a little life into it."

"After I have worked like a slave here for a year and lost money why do you want to rub it in by telling me I don't know how to run a garage?" Dick asked.

"Sit down," said Dan, "and I'll tell you how you can make some money; how I've made some for myself, and you can do the same."

"First of all, Dick, who would know this was a garage—why you haven't even a sign around the place—and from its general appearance I would call it a foundry. Suppose you were one of your customers who worked in a bank, and was on your way to the office. You wanted to buy a new casing, but would you want to stop in a place like this the first thing in the morning and get all messed up selecting a casing from that pile over there? And besides, what would make you think to stop here to get the casing—I don't see any show windows with tires in 'em."

Fault Not with Town.

"No, Dick, the fault is not with the town, nor the business, nor the people, nor the other stores—it's with you. You are forcing the hardware and other stores to carry and sell your line of goods. Suppose you wanted to buy yourself a new hat. Would you go to the little store around the corner where the old man keeps his hats all jumbled up in a dirty dark corner of his untidy store? Or would you go over to Main Street where there is a neatly dressed show window full of new hats, and a nice clean store with a courteous salesman to show

you hats? You know well enough where you would go. So it is with the motorist, Dick.

"What you want to do is to get old man Sapolio to working around this place and put a polish on it that you can see for four city blocks. Call in a carpenter and tell him to box up this morgue—tell him to saw the front end out and put in two good roomy show windows. Get yourself a showcase or two and dust off those accessories and arrange them so that they can be seen.

"Put a nice display in each one of your show windows. If you don't know how to dress a window, look in most any of your automobile magazines and you will find plenty of good, snappy suggestions. If you don't find what you want, sit down and write your tire manufacturer, or most any manufacturer from whom you buy, and they will be so tickled to know that you have come to life, they will almost send a man out here to do the work for you.

"The only trouble with this place, Dick, is that it ain't got no storage battery in it—you've lost your spark. What you want to do is to get charged up, put some gas in the tank, open your exhaust and make such a confounded noise that the whole country will know you're here and folks will know that you want to sell them what they need to run their automobiles with. Why, some of these farmers around in this country have got so much money that it makes 'em seasick when they try to figure out their interest. And the worst of it is that they're itching to have somebody show them what they need so that they can spend some of it.

"Do you know, Dick, that more farmers are going to buy tractors and trucks this year than they have ever bought before in the history of farming. All you have to do to get this business is to let 'em know you're here and can sell them what they want. And after you sell it to them, that you can give them whatever service they need.

"Now listen to me, Dick, you get this place in order and then get out and scout around a little and find out what your car owners in this territory need and send in orders. Investigate and find out what kind of tractor and trucks suit the needs of this farming district and then get busy and get the agency for a good brand. Don't stop until you have found out everything they need and know where you can get it, for it is just as easy to sell a man all he needs as it is to sell him a part of it—and maybe easier for he gets to depend on you for advice.

Can't Be Both Mechanic and Manager.

"After you have done all this, go over and buy yourself a new suit of clothes, Dick, and dress up. Don't try to be a mechanic and a business man too, it can't be done successfully. Nobody wants to buy from a man who looks like he has been dragged through a boiler shop—hands and clothes so dirty that he is afraid of touching him. Be a business man and hire the mechanic—it comes cheaper, and besides you look prosperous, and when they think you are making money they are glad to trade with you.

"Do you follow me, Dick, what you want to do is to

turn this place inside out. Make it so attractive and businesslike that you will have to run your customers out when they have spent their money. As it is now when a customer comes into your place his mind is occupied by trying to keep clean and he can't think of what he would like to buy."

"Guess you are right, Dan," said Dick, "I don't think I would come here to get anything but free air myself."

"That's not all, Dick," Dan went on, "you have one of the best salesmen in the world standing idle—Uncle Sam. He'll work for you dirt cheap and will round up new business for you every day. Buy, rent or borrow a typewriter and copy some of the good sales letters from your automobile trade paper. Send them out to all the car owners and farmers in your territory, and you'll have this place looking like a moving picture show on Charlie Chaplin night. You can use one of my letters if you want to. Here's one I'm sending out to all the car owners in my territory this week."

Mr. Timothy Smith,
R. F. D. No. 3,
Glenville, Arkansas.

My Dear Timothy:

Are you going to buy a "new" car this spring? Sometime ago you told me that you might.

On your first trip to the city would like to have you inspect our \$1295 six-passenger car, which is "wonderful value for the money." A car which you and the family will be proud to own.

Last week we sold ten cars! Not so bad considering it was a rainy week. Henderson, Jones and Adams, who are up your way, bought one of our new models.

And you know Henderson as well as I do! He won't part with the cash unless he feels he gets the best of the bargain.

I am anxious to also show you our 1918 line of accessories—the most complete we have ever carried, including everything from lenses to bumpers to spotlights, etc., etc.

Bring Mrs. Smith. She'll be interested.

Yours truly,

DAN THRIFT,
Prosperity Street,
Boomville, Ark.

"Here's the one I'll send them in about two weeks from now."

Mr. Henry Harper,
R. F. D. No. 16,
Charlotte, Arkansas.

My Dear Henry:

Drive over Saturday afternoon and let me show you our new TRACTOR!

Do you remember the last talk we had about TRACTORS?

I wasn't satisfied until we got just what you wanted. This little TRACTOR is true to its name—"Speedy"—it's low in price—light in weight and a bear for work. You'll like it!

And I am pleased also to tell you that we got some Good-year Cord tires in today.

Be prepared to give me a couple of hours, as I also want to show you a TRAILER which will "cut" your hauling-costs-to-market.

Yours truly,

DAN THRIFT,
Prosperity Street,
Boomville, Ark.

(Continued on Page 17.)

Planning for Years Ahead Is Foundation for Success

Automobile Dealers Prepared to Sell Trucks, Tractors and Farm Lighting Outfits Are Well Fortified

I once knew a small automobile and implement dealer who was one of those fiery young fellows that it seems you just couldn't keep from bobbing up every so often with a new idea. In most cases a mighty good and practical one, too, and each idea fully developed and his plan of action all worked out to a detail.

When questioned as to how he managed to conceive these things and work them out so accurately, his answer was:

"I simply look ahead and try and decide what conditions will be one year—two and maybe three years from today. When I feel I have reached a fairly accurate solution of what the future will bring, I then begin laying the foundation for a business to meet those conditions."

The marked success of this dealer proves his wisdom.

This dealer thought and thought hard, and when he had finished thinking he had a fairly good idea of what he should, could and *was going to do*. His thoughts were crystallized into one dominant idea, coupled with a determination that he was right and to go ahead.

That is just what every automobile dealer in this country of big dealer opportunities today must do if he wishes to keep pace with the times. Your business must reflect aggressiveness—you must assume the offensive and go after the big business waiting for you.

Tractors

In no insignificant way does the tractor proposition loom up on the horizon of the automobile dealer's sphere. Never before was there such a promising possibility offered dealers as the present day demands of the agricultural world for power driven machinery.

With the world demanding of our approximately 6,000,000 farmers, food products equal to that produced by perhaps twice this number of men of the soil, what degree of success can be expected without the introduction of time and labor saving devices. Tractors during 1918 are inevitable—they are destined to figure as prominently in the successful accomplishment of this big food task as is the farmer himself. It is a physical impossibility for the farmers to meet this exigency without devices which will not only conserve time and labor but also more efficiently do the work, thereby augmenting the gross yield on the total acreage.

The tractor must be sold by some one to the farmer. He is going to buy—he must buy. And is there anyone so well adapted and equipped to supply this demand as the automobile dealer?

Realizing the importance and the necessity of the tractor, several states have already or are now planning to appropriate funds with which to buy tractors for the farmers' use. Pennsylvania will supply its farmers with 200 tractors. Michigan bought 1,000 tractors and the plows to go with them. Never before in commercial history has such a potential field been opened and given such impetus from its inception by actual necessity as the tractor field.

Start your tractor campaign today. But in starting, think, study local conditions—study the nature of the soil of the farming locality in which you are located. Is it a deep, heavy loam, or is it a shallow clay, and what style of tractor is best adapted to those needs. Do the farmers in your section subsoil—if they don't, would it increase their production if they did? If they do not and by subsoiling their production would be increased—as it is in almost every case—then sell a tractor suitable in capacity for this work. Then you will not only be doing your customers a good turn, but you will be contributing thousands of bushels of grain to a hungry world.

After you have determined the style of tractor best suited to local needs, get the agency for such a machine and drive your campaign. Don't wait for some one to start the ball rolling. Begin yourself by getting out and demonstrating the saving and efficient working qualities of your tractor. This is the kind of a dealer that is a credit to himself and to the industry. There will be manufactured during 1918 approximately 100,000 tractors. How many will you sell, and how much will you increase your 1918 profits by this big new opportunity?

Trucks

(Of hardly less importance than the tractor, is the truck to the farmer. With the increased shortage of farm labor and the resultant increase in labor cost, an economical solution of farm transportation is found only in motor trucks. As surely as trucks have to a large degree replaced horse power in transportation in cities, so they will and must on the farms.

Motor trucks enable the farmer to carry his product to market in a fraction of the time required by a team of horses. At the same time it saves taking a team of horses from perhaps more important work in the fields.

Are you meeting this condition by selling a truck suitable to the needs of the farmer, or are you sitting idly by and sacrificing this big opportunity? Start today to establish yourself as a motor truck dealer.

Farm Lighting Plants

There are many farm lighting outfits on the market today which give such service and sell at such a price that they are intensely practical for farmers' use. If the sale of them is promoted by the automobile dealer they will yield an enormous volume of business with a proportionate yield of profit.

To sell lighting outfits in connection with tractors, trucks and passenger cars only increases your total business without an appreciable cost of operation. You are in daily touch with your prospects and can trade on the confidence they have in you through your other business relations. You more firmly establish yourself as a dealer in practical and useful power equipment—the sale of one device will lead to the sale of another. You create your list of customers and supply them with all their needs as regards “power equipment.”

If it is not the automobile dealer who does this, then it will be some one else. The farmer is to be supplied with modern equipment for his field and home—he will be supplied—is being supplied today. It is the automobile dealer who is the logical “power equipment” merchant.

Think, think hard and constructively, and stop short of nothing but an intensive application of every power within you to secure the one end—that of becoming the power equipment dealer of your territory.

Dan Thrift, Energizer.

(Continued from Page 15.)

“Of course, you want to keep your letters in season—call their attention to what they need ‘today’ and tell them that YOU are the one who can sell it to them.”

“Dan, you are right, as a garageman I would make a good hodcarrier, but here’s where I start in to learn.”

“Well, Dick, I must get back to the garage, I have a farmer coming to look at a tractor—you know I sell tractors now, good money in them. Write me and let me know how you are getting along—and don’t put any more ‘for sale’ advertisements in the paper unless you want to let a good thing get away from you.”

Dear Dan:

Every time I start to write you I get so infernally busy that I forget all about what I started out to do.

It’s been just three months since you showed me up and business is getting better every day. I didn’t know there were so many car owners in Lueville—and I didn’t know they had so much money they wanted to get rid of. Haven’t time to write you much as a truck man is coming around to talk trucks to me, and I’ve got to get my show windows fixed up. Want to have another talk with you some day so if you are in this neighborhood, stop in.

Send along some more of those letters that you send out—they keep ‘em coming in.

DICK.

National Dealers Offer Membership to Firms Association Changes By-Laws Limiting Its Benefits to Bodies of Local Trademen

Wishing to enlarge the sphere of the organization and to increase its influence through greater numerical strength, the National Automobile Dealers Association has amended its by-laws to permit individual firms and corporations to become members. Originally membership had been limited to associations of local automobile dealers. The change was made last month in Chicago at the first annual meeting of the association. Much interest was shown in the report of the first seven months’ efforts of the officers and directors elected at the organization meeting July 11, 1917.

Dealers and distributors from twenty-two states were in attendance at the meeting held in the Hotel La Salle. Among those responding to the roll call were representatives of the principal dealers’ organization of the country. Alfred Reeves, general manager of the National Automobile Chamber of Commerce, addressed the delegates and commended their efforts in organizing.

It was reported that the association was co-operating with the Commercial Economy Board of the Council of National Defense

for the purpose of eliminating waste in the automobile industry and has assisted in the formation of a War Service Committee to work in conjunction with the Chamber of Commerce of the United States in all such matters.

George W. Browne, Milwaukee, first president of the association, refused to become a candidate for re-election owing to business activities. The election of officers resulted as follows:

President, F. W. A. Vesper, Director, St. Louis Auto Mfrs. & Dealers Association; First Vice-president, John H. Mac Alman, President, Boston Automobile Dealers Association, Incorporation; Second Vice-president, Prince Wells, Louisville Automobile Dealers Association; Treasurer, Thomas J. Hay, Chicago Automobile Trade Association; Secretary, Bart J. Ruddle, 316 Germania building, Milwaukee, Wis.

Board of Directors: John H. Johnson, Boston Automobile Dealers Association, Inc.; Geo. D. McCutcheon, Atlanta Automobile Dealers’ Association; P. E. Chamberlain, Rocky Mountain Auto Trades Association, Denver, Colo.; P. H. Greer, Mo-

tor Car Dealers’ Association of Los Angeles; A. E. Maltby, Philadelphia Trade Association; J. A. Graham, Minneapolis Automobile Trade Association; C. A. Forster, Cleveland Automobile Dealers’ Association; Dean Schooler, Des Moines Automobile Dealers’ Association, and Geo. W. Browne, Milwaukee Automobile Dealers, Inc.

The report of Secretary Bart J. Ruddle showed that the following organizations had affiliated with their entire membership: Chicago Automobile Trade Association, Chicago, Ill.; Boston Automobile Dealers’ Association, Inc., Boston, Mass.; St. Louis Automobile Dealers’ Association, St. Louis, Mo.; Cleveland Automobile Show Co., Cleveland, Ohio; Kansas City Motor Car Dealers’ Association, Kansas City, Mo.; Minneapolis Automobile Trade Association, Minneapolis, Minn.; Milwaukee Automobile Dealers, Inc., Milwaukee, Wis.; Motor Car Dealers’ Association of Los Angeles, Calif.; Louisville Automobile Dealers’ Association, Louisville, Ky.; Dallas Automobile Dealers’ Association, Dallas, Texas; Rocky Mountain Auto Trade Association, Denver, Colo.; Atlanta Automobile Dealers’ Association, Atlanta, Ga.; Des Moines Automobile Trade Association, Des Moines, Iowa; Albany Automobile Dealers’ Association, Albany, N. Y.; Oklahoma City Motor Car Dealers’ Association, Oklahoma City, Okla., and Worcester Automobile Dealers’ Association, Worcester, Mass.

Melhuish Sees Big Demand for Motor Trucks This Year

Absence of Four Million Horses Leaves Much Hauling for Power-Driven Vehicles

By Wm. Fulton Melhuish.

Pres. Fulton Motor Truck Company.

There seems to be a firm conviction on the part of motor dealers throughout the United States that the year 1918 is to stand out historically in the manufacture and distribution of the commercial truck.

The slowing down of passenger car sales has given the automobile dealers of the country grave concern. Many huge re-

The weekly maintenance of teams and drivers, however, is ascertainable without difficulty, and for a long time the weekly cost of operating a truck was by comparison an item to cause buyers to hesitate. There seemed to be the inability of the mind to grasp the mileage and handling capacity of the motor versus the horse-drawn truck. Competition and the increasing use of trucks has caused these

States is handled directly onto the cars at its point of production, and directly off of the cars at its point of consumption.

The products of our farm transported into the market, the distribution of practically all foodstuffs through the wholesale grocery trade to the retail grocer; the vast volume of merchandise, which in packing box lots, and parcels, arrives at the millions upon millions of retail stores of every description, must indicate the volume of short haulage that only the motor truck is today fitted to handle in the most economical manner.



Mr. Levy.



Mr. Melhuish.



Mr. Nicholson.

Levy Now Chicago Dealer for Fulton Motor Truck

Because he had heard nothing but good reports concerning the performance of the Fulton truck and being assured that the Fulton Motor Truck Company had an adequate plant at Farmingdale, Long Island, President Levy of the James Levy Motors Company at Chicago, has become a distributor for the product. He will handle the Fulton in connection with his well established business as Buick and Premier distributor.

The territory in which the Levy organization will distribute the Fulton includes Illinois, the eastern counties of Iowa, the southern counties of Wisconsin, the northern counties of Indiana, and a small portion of south western Michigan.

J. P. Nicholson has been engaged by Mr. Levy to manage his truck department. Mr. Nicholson began his connection with the automobile business six years ago at Wabash, Indiana, as a salesman for the Service Motor Truck Company. When the Service company opened its Chicago branch he became its manager. He later went with H. Paulman & Company, Pierce Arrow distributors, as manager of their truck department. He had been with the Paulman Company nearly two years when he resigned to join Mr. Levy's force.

Mr. Nicholson explains his change by saying that he is certain there is a bigger field for the truck of one and one-half tons carrying capacity than for any other size commercial motor vehicle. He believes that the Fulton factory, specializing of this one model as it does, can build it cheaper and better than it would be possible in a plant where a number of different types are produced.

tail institutions with heavy over-head expenses and large service departments have during the past year seen an alarming slump in the volume of passenger car business, and have set their minds seriously to the task of remedying these conditions.

In the face of this slackening of passenger car sales comes a tremendous demand for commercial vehicles. The motor dealers have found in this demand a field of effort ripe for their attention, and heretofore neglected to an extent that few of them had realized.

The use of motor trucks in commerce is a matter of cold dollars and cents; a matter of record cost per ton mile; a matter of service to obviate delays, which cannot be tolerated; and a matter of education.

It is estimated that more than four million horses have been taken out of the United States in the past two and one-half years. The cost of feeding has risen to a point where the operating cost of the stable is a thing to be reckoned with. Few users of horses can tell you, except by rough estimating, the cost of horse haulage per ton mile.

differences to become comprehensible.

The greatest element working towards the more favorable reception of the commercial vehicle, by the motor trade, has unquestionably been the element of necessity—the necessity of having something to sell that will sell—something that has a real business appeal in these business times when pleasure steps into the background, and when necessity is the first consideration of every man.

The railroad situation has also had its influence. There has been an awakening to the facts and figures covering short hauls. When the necessity for embargoes dawned upon the public, and the railroads refused to receive freight, manufacturers suddenly found that they had two kinds of freight to handle, viz., that destined for nearby points, and that destined for distant points.

This does not, of course, contemplate the manufacturer, who, through the size and volume of his business, has switching facilities at his factory. But in actual tonnage, it is estimated that less than 20 per cent of the merchandise of the United

Effective Window Displays Possible at Small Expense

Very Little Thought and Effort Needed to Arrange Attractive Exhibition—Some Practical Suggestions

Window displays that have the advantage of being attractive and easily arranged are sure profit producers. Unless a merchant who has accessories to sell is making the best use of his windows he is doing without one of the greatest means of increasing his business.

A practical and inexpensive method of arranging a window display was described and illustrated in a recent number of *The Stewart Lever*, from which the illustrations below are taken. The description with the pictures was in part as follows:

In order to make the construction of this window very clear to you, we

or pieces of wall board, covered over with black and white diamond-shaped pattern of crepe paper, which is easily procured from a nearby stationery store or from any department store.

Four other boards, two of them ten inches wide and the others twelve inches wide, are up-ended against the background and against the sidewalls of the window, these boards being covered over with crepe paper or cloth.

Two small boxes are used in the center of the window on a low platform on the floor and these boxes are covered with the same material that you cover the boards.

A couple of spark plugs have been fastened on the upper surface, and reclining against this board has been placed the new, bright-colored poster show cards. This completes the use of five of the attractive show cards which we furnish.

Against the center of the wall board background has been pinned a circular arrangement of spark plug boxes, and in the center of this has been arranged a speedometer, complete with flexible shaft, gear wheel, etc.

Across the top of the two small boxes has been placed a Stewart instrument board for Ford cars

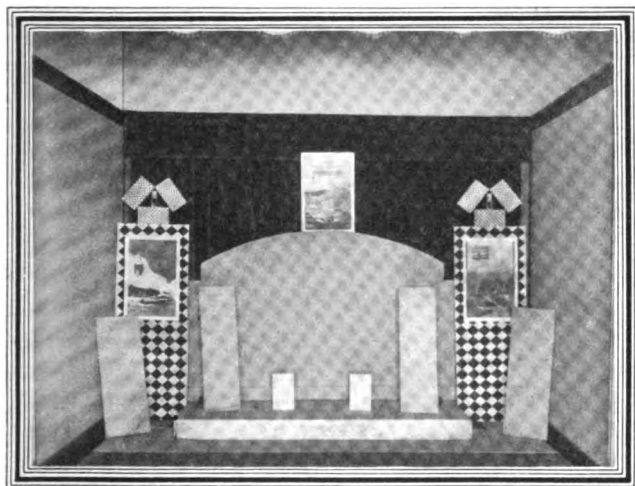


Figure 1.

have shown in our Figure 1 a photograph of the foundation of the window before these goods have been placed therein.

The low background has been made out of a piece of wall board, which you can procure from your local lumber dealer, cutting it with a semi-circular top and fastening it across the back of your window. This gives enough of the background, against which the merchandise and signs will show up well.

In the corners of the window we show the use of two very wide boards,

Two show cards are placed at the top of the wide boards in the corner of the window and one of them fastened on the top of the semi-fastened circular border of the background.

We now refer you to the complete window display shown in Figure 2, which shows you how cleverly the boards have been used for the display of Stewart-Warner products.

The two ten-inch boards at the back of the window have the spotlights fastened at the sides of the top, and hand horns screwed on to the upper edge.

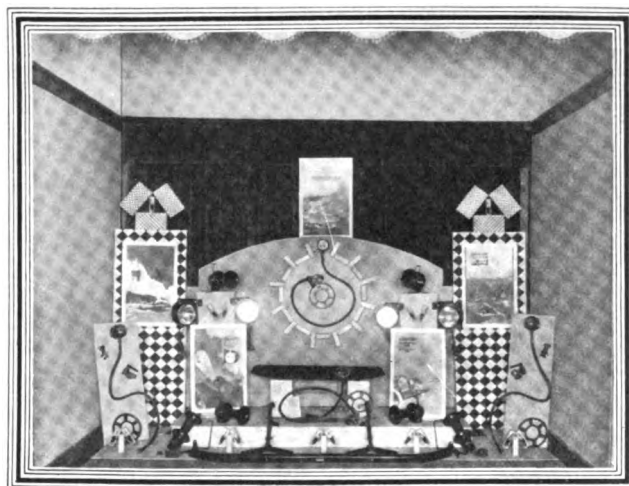


Figure 2.

equipped with speedometer. The two twelve-inch boards that incline against the side walls of the window are used for the showing of Stewart speedometers and parts.

A careful study of the floor of the window will show you how a Ford bumper, horns, spark plugs, etc., have been attractively arranged.

A distinct advantage of this suggested window display is that it is flexible, so as to permit of variations in arrangement. Other accessories may be added, or substituted, as the judgment of the dealer may dictate.

Tractors a Vital Factor in War Demand for Food

Needs of Farmers for Motive Power Forcing New Industry to Grow Rapidly

By **LEROY A. KLING**

Advertising Counsel
National Tractor Company

When the United States entered the world war, a new industry was turned to as a means of sustaining her hungry armies at home and abroad as well as contributing an important part toward the maintenance of the allied armies. This was the tractor industry, destined to equal, if not exceed in importance, the automobile and motor truck industries, our other recent world contributions.

Confronted with the necessity of raising two bushels of wheat where one was raised before with less but more expensive labor, with the Government purchasing all the available farm horses the country over, the American farmer turned to the farm tractor as his only means for doubling his crop production.

As a result, the year 1917 was a record-breaker for the farmer. Crop values for 1917 exceeded 13 billion dollars or \$4,594,898,000 more than the crops grown in 1916. Without mechanical means, this record of achievement would have been simply unattainable, as a result the farmer today in every part of America, whether his farm be large or small and regardless of soil conditions is looking about him to select the tractor best adaptable to his immediate conditions.

Hitherto, many of these farmers never considered that they could either afford or operate a tractor. Their change of heart has been brought about as much through the perfection and standardization of the tractor as by the necessity of increasing production radically. So with fewer horses, fewer men and necessity of increased production, the demand for tractors has increased far beyond the American manufacturer's

ability to deliver. But 1918 will see—is seeing—several companies making as many as 10,000 tractors of a single size and design and built along the strict lines of standardization with efficiently managed distributing organizations to give attention to instruction in operation and service.

The Early Tractors.

The individual or organization about to handle the sale of tractors should give consideration to early manufacturing conditions. The tractors of the last fifteen years have been made for the most part by thresher manufacturing companies. With the successful development of the gasoline engine, the manufacturers of steam engines substituted oil fuel. There is not one of these converted tractors on the market today made by a thresher concern which does not show a trace of steam engine manufacturing practice. These early tractors were noted for the amount of cast iron used in their construction.

The Modern Tractor.

Now comes a thoroughly modern tractor built rather to suit average farming conditions the world over than to complete the implement line of the large agricultural machinery makers, a tractor built of the most carefully selected materials and embodying the following qualifications:

- (b) Traction grip.
- (c) Reliability.
- (d) Economy.
- (e) Light weight.
- (f) Simplicity.
- (g) Ease of handling.
- (h) Speed.

The tractor to which I specifically refer is the National Tractor, built by the National Tractor Company of

Chicago, Illinois, and Cedar Rapids, Iowa. Built in this tractor is found the experience of America's best engineering and manufacturing brains.

Automobile Dealer Logical Tractor Agent.

So closely does this industry parallel automobile and motor truck manufacturing practice, that many of the larger manufacturers are looking to the automobile dealer as the logical distributor. His acquaintance with automobile mechanical adjustments gives him the training necessary to maintain uninterrupted tractor service during the heavy operating season. He is in a position to render peculiarly efficient repair and replacement service. His field is unlimited, he has just as many prospects as there are farms of 100 acres or more in his neighborhood. Every automobile dealer or garage man should represent one of the standardized tractors on the market. The demand this season will be greater than ever and tractor sales open an avenue to profit which can not be overlooked by the live-wire dealer.

What the Modern Tractor Will Do.

The work of the tractor is so varied that it recommends itself for all farm purposes. Developed originally for its plowing ability, its wide use for belt work was at first overlooked. But power farming in the broad sense takes into account the following and for all these uses the tractor is the ideal power plant:

- Plowing.
- Discing and seeding.
- Hauling produce to market.
- Industrial hauling.
- Road grading.
- Running ensilage cutter.
- Operating threshing rig.

Hauling corn binder.

Mowing, loading, hauling, and baling hay.

Grinding feed.

And aside from its practicality for all field work, the tractor represents a two-fold investment because of its wide usefulness at the belt. The tractor will outlive the horse in terms of working hours and cost of upkeep.

What Size of Tractor.

The size of farm, the class of work to be done, the condition of the soil, all contribute to the decision. A recent canvass conducted among a number of leaders in the industry, bears out the fact that the tractor which will develop an actual brake horse power at the draw-bar sufficient to pull three 14 inch plows under any soil conditions for plowing and a belt power of about 25 brake horse power sufficient to run a 16 inch ensilage cutter or 28 inch thresher is the one which will satisfy 90% of the market requirements.

Standardization Important.

Of late there has been a tendency to standardize the engine, carbureter, transmission, wheel diameters and other tractor accessories. This has resulted in the almost universal adoption of a 4-cylinder type of motor. Four cylinders have seemed to result in correct proportioning of engine weight to horsepower and operating efficiency.

The modern tractor is simple to operate. It is no uncommon sight to see the women or one of the children driving the tractor through the fields. If there are repairs or replacements to be made, they can be had the same day from the local garage or automobile dealer.

This standardization and simplicity have done more toward popularizing the farm tractor than any other agent. Every farmer either has one or feels that he ought to get one and every automobile dealer should secure the local agency for some good standardized make and help to supply the local demand for farm tractors.

AMERICAN GARAGE & AUTO DEALER accepts no doubtful advertising. Business-like dealings are guaranteed if the subscriber mentions the **AMERICAN GARAGE & AUTO DEALER** in his letter to the advertiser.

C. S. Rieman, Heads Concern He Founded Two Years Ago

With Elevation to Presidency of Elgin Motor Car Corporation He Retains General Manager's Duties

Announcement has just been made of the recent election of C. S. Rieman to the presidency of the Elgin Motor Car Corporation, Chicago, which he founded about two years ago. Mr. Rieman has been vice-president and general manager of the company since its organization. With the duties of the presidency he retains the title and activities of general manager.

administration structure, adjacent to the main plant, will be ready for occupancy in the near future.

The corporation's second year showed increases over the first of 1,074 per cent in sales and 2,000 per cent in assets, a record which has probably never been equaled even in the automobile business. The Elgin concern began operations in a small



C. S. Rieman.

Starting manufacturing operations less than two years ago, the Elgin concern has been built up to a point where it now has one of the finest automobile plants in the country. It has a production capacity of 100 cars per day, or \$30,000,000 worth of automobiles a year.

The Elgin factory of modern steel and brick construction, with its 600 feet of conveyor assembly system is said to be one of the finest automobile manufacturing establishments in the country, both as to building and equipment. The new Elgin

rented frame building. Soon thereafter a factory site was purchased and construction work has been going on almost continuously since that time.

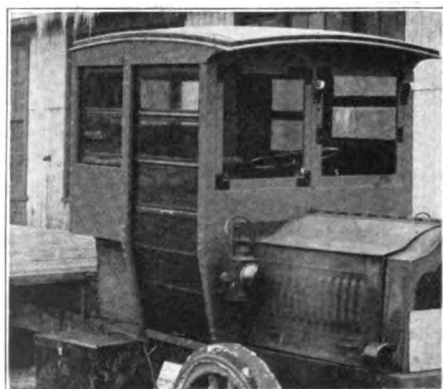
The secret of the success of the Elgin concern has been its capable management, which has been progressive and aggressive from the very beginning. Under the direction of Mr. Rieman an unusually strong organization of automobile executives has carried the corporation forward to rapid success.

Practical Motor Truck Cab Made by Pontiac Body Firm

Driver and Helper Are Protected at All Times, But
Can See Front Hubs

The Detroit Weatherproof Body Company of Pontiac, Mich., has added to its line a practical truck cab so constructed that it can be completely enclosed, affording the driver and helper absolute protection and comfort in all weather. Sides, back and windshield can all be opened or closed by the driver without dismounting.

Durability is the keynote of this practical cab. Twenty gauge steel and the finest quality of hardwood frame, strongly reinforced, are the principal elements in its construction.



Cab Entirely Closed.

This cab has a 40-inch seat. Highest grade imitation leather is the exterior covering. The doors are sliding type, pushing up into the deck. Celluloid is used for the lights, which extend far down in the sliding door panels so as to enable the driver to see the front hub caps at all times—a great advantage in truck driving.

Celluloid lights are also used in the sliding windows which disappear into the roof when in an open position. The rear window is of glass in two sections, divided in the middle perpendicularly so that in opening they slide to each side. The vertical sliding doors and side windows are of weatherproof material, substantially built over a movable frame consisting of long side pieces of clock spring steel with steel rod cross braces, which hold the sliding panels snugly within steel channel guides.

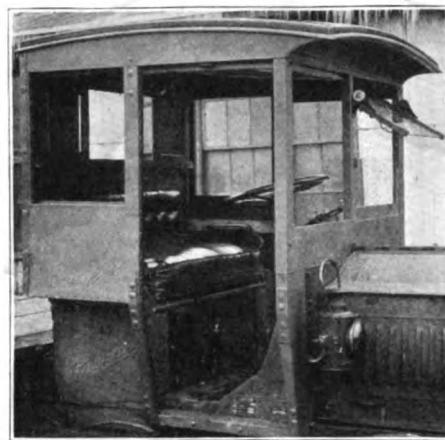
The cab, ready for shipment, is of seven units only and is packed in a crate five feet square by one foot deep, thus allowing railroad classification as automobile tops. The deck is so solidly built that extraordinary means would be necessary to break through the roof covering. All angles and corners are bolted together, and the whole frame bolts to the rear sides and front of the seat frame. Two work-

men can uncrate, fit up and attach the cab in three hours.

Prominent features which appeal to the man at the wheel are as follows: Their personal comfort in inclement weather; the ability to drive close against a loading platform without allowing space for a swinging door to open; the fact that with the cab completely enclosed, they can see the road close to the front wheels, as well as having a clear vision to the front, back and each side, and that the door can be partly raised instantly to permit emergency signaling by the driver under crowded traffic conditions.

With the great expansion of the use of motor trucks in all lines of industries a truck cab satisfactory for all-weather use has become almost a necessity. The Detroit Weatherproof Body Company foresees an enormous demand for such an attachment and is first in the field with a truck cab combining the qualities above outlined. Battleship gray has been adopted as the standard color so as to permit of repainting with colors desired by the purchaser, which special painting can be done at the factory.

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Cab Open for Warm Weather.

Saxon Company Makes Light Delivery Vehicle

Another model has been added to the line of motor cars of the Saxon Motor Car Corporation in the Saxon light delivery car, which has recently been placed in the hands of the dealers. In bringing out this new car, the Saxon company is offering merchants a six-cylinder delivery motor car. Six cylinders, as in the passenger models, mean higher flexibility and adaptability to congested traffic conditions.

The delivery car has a load capacity of 500 pounds and is offered in either a panel body or one with drop curtains. While the motive power is the regular Saxon six-cylinder motor and the transmission and working parts are those which have passed the test of service in the passenger models, the delivery car is not simply a regular six-cylinder chassis with a delivery body. Additional weight and strength have been



Clydesdale Trucks Carry Smaller Ones

Freight congestion is no obstacle to the Clyde Cars Company, when dealers demand Clydesdale trucks. The photograph shows a train of trucks starting out from the factory at Clyde, Ohio, for Pittsburgh, Pa., with the snow on the roads a foot deep. Two of the trucks are loaded with trucks of a smaller size. This is a common sight on the roads about Clyde, as truck trains leave the factory frequently on long trips.

given the frame and heavier springs have been placed also, making the car more than able to bear its capacity load.

Motors Household Goods From Chicago to Goldfield

Charles I. McHenry used a King semi-trailer to transport Mrs. McHenry, himself and his household goods all the way from Chicago to Goldfield, Nev.—a 2,800 mile jaunt. When business necessitated moving to Goldfield he decided to drive there. He bought a Knox traction unit, a King semi-trailer, loaded the King with his household goods, climbed into the Knox and away they went.



The McHenry Outfit Ready for Journey.

Tractor, trailer and load left Chicago in charge of a chauffeur, who took the outfit into Springfield, Ill. There Mr. and Mrs. McHenry took charge and started to drive the rest of the way.

This Knox traction unit is a converted Ford with a carrying capacity of one ton. The King semi-trailer used is the 1½ ton model. There is no extra strain on the Knox, as it has a tremendous reserve pulling power equal to three times carrying capacity.

The King semi-trailer is the same type used so extensively by dealers and manufacturers who must have a dependable hauling unit. The floor frames are three sills of two by six inch hardwood, running longitudinally and braced cross-wise with angle iron. The floors are well-ironed and the lattice stakes removable. A tarpaulin was stretched over the load to protect it from the elements. Castings, shackles, hubs, etc., are steel and the axles, extra heavy section 35 point carbon steel. The wheels are regular motor truck type, second growth hickory with taper roller bearings. Springs are semi-elliptic. Tires are solid rubber and the kind to withstand the wear of the country roads and city pavements.

The picture shows the outfit just about to leave Chicago for Springfield.

Motor Truck Saves Time for Produce Merchants

Discovering that shipping by motor truck is not only cheaper but considerably quicker than via railway freight, Racklind & Farber, produce merchants of Chicago and Indianapolis, have inaugurated a regular motor freight line between the two cities. They have big storerooms in Chicago and Indianapolis and their freight shipments in the past have been large ones.

Speed in shipping produce is a necessity. Slow-moving freight trains have often caused the commission merchants a heavy financial loss. Several weeks ago the firm was unable to secure a through car for a

miles of unimproved roads that were encountered.

Trucks Must Move Fast for Work in War Zones

What are the requirements of motor trucks as to speed in the war zone? The answer to this question, so frequently asked, is given by Thomas & Thomas, automotive engineers of Detroit. W. Owen Thomas was an eye witness and student of every phase of motor truck work and construction in the European war.

"War trucks are normally operated at from 12 to 15 miles per hour, but the governors are usually set to allow of a speed of 18 to 20 miles per hour in an emergency," declares Mr. Thomas. "The governors are often disabled, and a great many trucks are not provided with governors at all.

"Most of the trucks in France are geared so that their engines will operate continuously at 18 or 20 miles an hour on high gear in emergency. They are also required to operate on second gear up to a normal speed of 12 miles per hour so that in an undulating country the convoy is not spread out by vehicles slowing up on hills. The later trucks designed have a reduction of 50 to 1 on low gear in order that they will maneuver on low and reverse under bad road conditions without it being necessary to race the engine in starting.

"It is found in practice that even the axles do not suffer as much from this extreme reduction as by racing the engine and letting the clutch in as is necessary with some older type trucks sent from America."

Motor Truck Eecutive Praises Twit City Show

"Honor of putting on one of the best automobile shows of the season must be given to the Twin City affair at Minneapolis. Not only was the exhibit a fine one, wonderfully extensive, considering shipping difficulties, but the show drew from many sections and established a record as far as results are concerned. Farmers throughout the Northwest are showing keen interest in motor trucks and the outlook is for a splendid trade this year. In fact, agricultural interests throughout the country have adopted the motor truck as the best paying piece of farm machinery, for with the labor shortage time counts more than ever in the past."

J. C. AYERS,
Vice President,
Denby Motor Truck Company.

load of goods a Chicago hotel required. A truck owned by the firm was loaded with 2,300 pounds of perishable freight in Indianapolis. The run to Chicago, 186 miles, was made in 13 hours.

The truck arrived at the hotel without the double loading and unloading required when shipment is by rail. The roads were covered with snow and ice for the entire length of the trip. The truck, which was a Maxwell, made the journey without a bit of mechanical trouble.

"The Maxwell truck performed so well and is so extremely economical that we are going to make the intercity freight deliveries three times a week," stated Mr. Racklind after a recent arrival in Chicago.

Hyatt Roller on Goodyear Cords.

Now that the double transcontinental tour of the old Buick, known as the Hyatt Roller, has been finished, completing a total of 272,962 miles traveled since its initial trip in 1907, it is interesting to note that Goodyear tires have played an important part in this old car's career. During the 10 years that this car was piling up the longest mileage ever rolled by a single car, it has run principally on these tires. On the last tour covering 11,163 miles, the four original Goodyear cords rolled 10,406, 10,103, 8,900 and 8,400 miles, respectively, in particularly severe service on the many

The Industry, Men—the Editor

Go After Your Prospects

Even though the weather may not be pleasant enough to make driving around as enjoyable as it will be three or four months from now, no dealer can afford to sit around his showroom, or at least he cannot until he has met every prospect in his territory—after that he will be too busy. This is especially true of the dealer in the smaller places because he has a much better chance to get a prospective purchaser interested to the point of buying if he goes to the customer's house than if he waits for the prospect to come to his own place of business.

The prospect who, if he did go into the dealer's store, would say: "No, I guess I can't afford it," if asked to buy a car would not be quite so likely to make this remark had he been in the presence of his wife and other members of his family. This is especially true in the event that he could very well afford to buy a car if his interest had been properly aroused. It was said of a very successful dealer of a small town in Illinois that he never took an order for a car at his own place of business in spite of the fact that he averaged selling more than 100 cars a year for several years. He always went to the houses of his prospects. He took particular pains to get the wife and the rest of the family interested when he began work for a sale. He did everything possible to keep this asset and always found it would pay big dividends.

Interest in Public Affairs Will Repay Motor Tradesmen

Motor tradesmen of all sorts—car and truck agents, accessory dealers and service men—should take an active interest in public affairs of their neighborhoods. The prosperity of their business, to a great extent at least, depends upon the number of miles of good roads, whether these be city streets or country highways, over which passenger cars or trucks can be driven. The best way to be sure that these arteries of commerce are kept in the best possible condition is for the men most concerned to show sufficient interest in the affairs of their localities that when they suggest street or highway improvements the officials will listen to these suggestions and follow them.

More than ever before in the history of the business is this sort of an attitude necessary now if motor vehicle merchants are to gather the crop of profits which will follow the fast growing sales of motor driven delivery vehicles of all kinds and weights. It is not expected that it will be necessary for automobile men to go into politics but they can display enough interest in municipal affairs to win recognition for highway improvement and maintenance without serious sacrifice of time.

Farmers Buy Service—Not Looks

When planning sales campaigns in districts where farmers, active or retired, predominate it will be well to bear in mind the likes and dislikes of these shrewd buyers. Farmers have invariably conducted most of their purchasing along the lines of the service and operating expense of the articles bought. The "what will it do" and "how much will it cost" attitude has become second nature to the farmer. Until very recently the farmer worked under conditions which forced him to be very cautious with his expenditures. Even now when the farmers as a class have more money than ever before they retain their careful habits of trading. While appearance or style or finish or general reputation frequently helps to sell some certain make of car in big cities, these factors have little weight in country districts. Of course, the farmer does not want an ugly vehicle nor is he likely to accept one that is poorly finished but it will be found that he will buy both passenger cars and trucks mostly on the basis of the service they will render, and what they will cost to operate.

Ohio Dealers Good Example

Dealers' organizations all over the country can well afford to acquaint themselves with and follow the plans of the Ohio Automobile Trade Association. The keen business men who compose the board of directors of the Ohio body have started on a campaign of education to "sell" the Association idea to the public. Their plan might be said to provide for three divisions of the main campaign. They propose first to thoroughly convert the several hundred members of their own organization to the benefits of co-operating in the work of the Association.

Having done this they intend to see that the members spread the gospel of co-operation to as many other automobile tradesmen in their State as possible. Then they will get the support of the enlarged membership to a definite "better business practice" plan. After this has been accomplished the benefits of doing business with the members of the Association will be forcibly presented to a great body of Ohio owners of automobiles and motor trucks.

Farmers' Trucks Might Help Relieve Freight Congestion

It has been suggested that farmers and truck gardeners that are owners of motor trucks could play an important part in relieving the freight transportation congestion. During several months of the year when fields are covered with snow and ice these trucks stand idle

in the stables, while perhaps only a few miles away in some city there exists an urgent call for every unit of motor driven freight carrying capacity.

It seems that this subject might well be taken up by the State Granges, whose officers might act as truck dispatchers in sending idle vehicles into cities and towns where they are badly needed. This would bring to the farmers quite a little money which they perhaps would be glad to have. The firms or merchants for whom they did hauling would not only be glad to pay them but would be much helped besides. The Grange officers, having made a sort of census of the farmers' trucks available for use in city hauling work would probably be able to place them readily by communicating with the secretaries of boards of trade in the larger cities of their states.

Organize Truck Freight Lines

One way in which garage men and automobile dealers can serve their country and themselves is by organizing, or helping to organize, motor truck freight lines for the transportation of short haul freight. One of the out-

standing facts of the general congested railroad situation is that much of the trouble has been caused by the necessity of using railroad cars to carry freight of various kinds for relatively short distances.

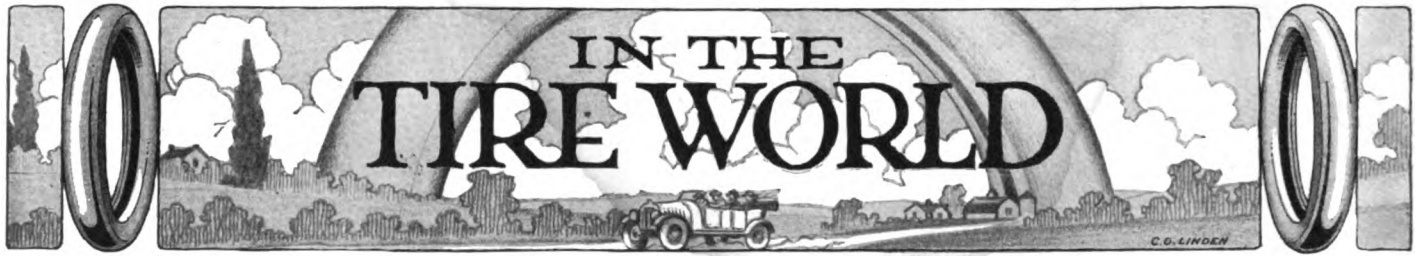
When goods are shipped by railroad they must be placed on a motor truck or a horse drawn wagon, carried to the freight platform, unloaded into the freight house and later taken into a car. Then they must be moved out of the car and put into the freight house at the end of the journey, after which a wagon or motor truck must again be used to transport them to the consignee.

As contrasted with this excessive loss of time and motion, with the motor truck freight line the goods are placed once from the starting point on the motor truck and then unloaded at the end of the journey at the store or other establishment of the buyer.

Automobile men, especially garage men and those dealers who have had any experience with business motor vehicles, are best fit to become sponsors for these motor truck freight lines. They have had enough experience with motor vehicles to be able to plan with knowledge of what a truck will do and thus make adequate provision to give proper service.



—Courtesy Diamond Rubber Co., Inc.



START SPRING SALES DRIVE, DON'T WAIT FOR BUSINESS

Garage men and automobile dealers who have tires to sell—and all of them should—can get a good deal of business by starting a spring sales campaign now. Many car owners will soon be needing new tire equipment and this is especially true of those motorists who have not used their vehicles very much during the cold months.

One dealer in a small Indiana town has made it a practice every spring for several years to solicit tire replacement business. He takes his list of car owners in what he considers his sales territory and writes letters to all of them. Knowing as he does the cars they are driving he is able to tell them exactly how much new casings and tubes will cost them.

He has found it a good plan to suggest sometimes that his stock of certain popular sizes is somewhat limited and to urge his customers to buy immediately for this reason. He reminds them of the disappointment they would have some fine warm day when they wished to start out on a short tour if they were to find that they needed tires, and then were unable to obtain them.

This year this tire merchant has devised a new phase of his spring tire campaign. He has offered to shellac the rims, either demountable or fixed, on each wheel for which he supplies a new casing. He also offers, for a small amount, to apply the shellac to other rims of cars when the old shoes are still in good condition.

Any one who has ever been forced to detach an old shoe from a rim covered with rust will appreciate the real service this dealer is offering in this particular. Even with rims that are

split or collapsible putting on and taking off tires is much simplified when the surface on which the beading rests has been well shellaced.

If a dealer has a repair man skilled at vulcanizing and patching, he should play up this feature in his sales campaign. A good many dollars in profits can be had if a prompt and efficient repair service for casings and tubes is maintained. This is the best sort of conservation of resources, for a small amount spent for vulcanizing a cut in a tire shoe will do away with the need of buying a new one—which soon follows neglect of these damages to the fabrics of a casing.

The spring tire campaign need not be confined to letters alone, but it will be well to use the telephone in order to get into immediate communication with as many prospects as possible. In case of car owners who have no telephones it will likely be time well spent if the dealer will make it a point to get into personal touch with these prospective purchasers by going to their offices or homes.

An advertisement outlining this idea could be easily and quickly prepared. Its insertion in local newspapers would be practically certain to result in a goodly number of orders.

Good Show in Small Town; Oak Park Dealers Pleased

Absence of an exhibition building had no terrors for the dealers of Oak Park, Illinois, when they decided to have a show of their own, even though they are within a half hour or so trolley ride of the Chicago Coliseum, where the big Western National exhibition is held. Arrangements were made with the Radway Garage Company for the use of its service building in Williams street, a few yards away from Marion street, the main thoroughfare of the town. A banner was strung across Marion street so that no one had much of an excuse to miss knowing about the show, and at night ropes of electric lights were festooned over the street in front of the show building.

Even though Oak Park has a population of only about 20,000 it is estimated that 3,500 persons visited the show. The exhibitors, who displayed cars as well as accessories, were greatly pleased with the success of the affair. In fact the attendance was so good that the show was self-sustaining. Practically all of the exhibitors who showed cars made sales in addition to getting the names of a good many prospects who expect to buy in the immediate future.



Swinehart Tire Company's Sales Conference Dinner

Employees of the Swinehart Tire and Rubber Company composed the orchestra that furnished the music for the dinner that wound up the concern's annual sales conference at Akron, Ohio, last month. The company officials, branch managers, salesmen and factory department heads attended the gathering. President T. F. Walsh made an address on the relation of the rubber industry to the war and the part it must play.

YOUR SHOW PROFITS

Mr. Automobile Dealer, are you getting what you should out of automobile shows? Perhaps no other one thing has such an important and beneficial effect on sales as the holding of automobile shows. They afford an opportunity for the dealer to get from his factory especially finished models for exhibition purposes that it is very unlikely that he would be able to obtain simply for display.

Automobile owners, present and prospective, have shown a steadily growing inclination to pay the necessary admission fee to go to automobile shows. Most of the folks who visit exhibitions of this character are good prospects. It may be that they have no immediate intention of buy-

ing but very frequently they do so when attracted by some particular model or when some capable salesman has an opportunity to explain the merits of his car to them.

There is a tendency all over the country for dealers in small places even of 15,000 or 20,000 population to promote and hold shows. This can be done by staging the affair in a garage or service station. As a rule these structures are of fireproof construction and can be readily adapted for use as exhibition buildings. It is not necessary for dealers to wait until they have become united in a formal organization as it is perfectly feasible for three or four men to get together and hold a show.

Dealers who handle trucks or who have realized the profit possibilities of this line and are planning to do so can have truck shows of their own. These may be staged in their own show rooms or service buildings or in large vacant stores located in prominent streets or in any other suitable building where it will be possible to get plenty of visitors.

Automobile tradesmen who now, or soon will, handle tractors could also use the show idea to good advantage by making their display an invitation affair. They could get a list of prospects ready and then send printed cards of admission for the show to the names on this list.

THE EXHIBITOR

If the dealer is an exhibitor in an automobile show, he will do well to impress upon his salesmen and other employes the fact that the display is being held for the purpose of making sales. This applies both to the car dealer and the accessory man. The practice of permitting friends of either sex to use a show space as a rest room should be absolutely forbidden. People with any idea of buying a car are not likely to enter a space to ask about some particular kind if the space is filled up by persons who are obviously not there from any real business interest.

THE VISITOR

Dealers in smaller places who are unable to arrange to have automobile shows held in their own towns ought to invest the necessary time to visit motor vehicle exhibitions in the nearest big city to their homes. At these gatherings they will frequently learn more about improvements of cars and new features in the accessory line than they would in any other way. Shows have great educational value for the dealer who keeps his eyes open and notices how the displays of cars and accessories are arranged in the various spaces at the shows, large and small.

- Mar. 11-16—Cedar Rapids, Iowa—Automobile Trade Association Annual Show, Auditorium.
- Mar. 12-15—Fargo, N. D.—Annual Show, Auditorium.
- Mar. 13-16—Warren, Pa.—Automobile Dealers' Association Show.
- Mar. 13-16—Raleigh, N. C.—Annual Show, Auditorium.
- Mar. 13-16—Peoria, Ill.—Automobile Accessory Dealers' Association Show.
- Mar. 16-20—Great Falls, Mont.—Montana Automobile Distributors' Association Second Annual Show.
- Mar. 18-23—St. Louis, Mo.—Automobile Manufacturers' and Dealers' Association Used Car Show, Exhibit Building.
- Mar. 19-23—Vancouver, B. C.—Western Canada Automobile Association Show.
- Mar. 19-24—San Francisco, Cal.—Motor Truck Show, Auditorium.
- Mar. 19-24—San Francisco, Cal.—Motor Truck Show, Auditorium.
- Mar. 20-23—Sioux Falls, S. D.—Automobile Association Show, Coliseum.
- Mar. 20-23—Holdrege, Neb.—Second Annual Show.
- Mar. 20-23—Trenton, N. J.—Show, Second Regiment Armory.
- Mar. 25-30—Bridgeport, Conn.—Annual Show, Fourth Regiment Armory.
- Mar. 25-30—Rochester, N. Y.—Rochester Automobile Trades Association Tenth Annual Show, Exposition Park.
- Mar. 30-Apr. 6—Hartford, Conn.—Automobile Dealers' Association Show, Armory.
- Mar. 30-Apr. 6—Atlantic City, N. J.—Second Annual Show, Garden Pier.
- Mar. 30-Apr. 6—Chicago, Ill.—Chicago Automobile Trade Association's Second Annual Exchanged Car Show.
- Apr. 1-6—York, Pa.—Automobile Dealers' Association Show.
- Apr. 6-8—Green Bay, Wis.—Automobile Trade Association Show.
- Apr. 6-13—Red Bank, N. J.—Monmouth County Automobile Dealers' Annual Show, Armory.
- Apr. 8-13—Reading, Pa.—Automobile Trade Association Show.
- Apr. 9-13—Stockton, Cal.—San Joaquin Automobile Trades Association Annual Show.
- Apr. 17-19—Davis, Cal.—Tractor Demonstrations, University of California.
- Apr. 17-20—Calumet, Mich.—Copper Country Automobile Dealers' and Garage Owners' Association Show.
- Sept. 23-28—Chicago, Ill.—Ford Accessories Show, Coliseum.

How to Make the Shop Pay

Free Service Practice Comes Up for Discussion and Decision Made Not to Burden Mechanical Department with This Expense

By E. B. HINRICHSEN

Mr. Brown had a great deal of trouble breaking up the free service practice. He was not a practical garage man and could see no reason for it. When he began to talk of abolishing this he nearly brought the roof down on his head. A howl went up from the sales force, the accessory department, the manager and even Bill seemed doubtful.

After two or three days of arguing and squabbling, the whole gang gathered in the shop late one night and thrashed it out. The head salesman and the accessory man declared that such a course, if followed, would mean a tremendous falling off in business and advanced a number of reasons why it was necessary to give a certain amount of service with each car sold and with certain accessories. The manager acted as umpire, and Bill, as he said afterward, was there to separate the arguers if they came to blows.

Boiled down, the salesman's reasons were about as follows:

1. Every man who bought a car was entitled to instruction and adjustments free of charge for a reasonable length of time.
2. Every car that was sold required a certain amount of adjusting and tuning before it was really in perfect running condition.
3. The free service plan made the owner feel better, made him a regular and permanent customer and did not amount to enough to worry about any way.
4. Everybody else did it.

The accessory man maintained that when a man bought a horn or a tire or anything else that required time for installation, he was entitled to that service free of charge.

Mr. Brown found that he was unable to make them see things his way. His arguments were good, but they did not suggest a remedy. To the salesman he replied:

1. That it was true that every man who bought a car was entitled to instructions and adjustments free of charge for a reasonable length of time, but that there should be a limit set on that time. The profit on the sale should pay the expense involved and the shop should not be made to stand it. As to what constituted a reasonable length of time, he was not in a position to say, but that he thought six or eight months was not reasonable. He cited nine cases in the week before where

owners who had bought their cars at least six months before had come into the shop with orders from the office for free service.

2. That he understood it was a fact that new cars were not in perfect condition when received. But he believed adjustments could be made on them as they arrived in much less time than they could be made after they were sold and in the owners' hands. The shop should be paid for these adjustments from the profits on the sales.

SUGGESTIONS ARE WELCOME

These articles by Mr. Hinrichsen are being prepared to help our readers in the everyday work of their business. We hope that garage men, dealers or repair shop owners who have any ideas along these lines will not hesitate to send their suggestions along to us. This department can be made even more valuable than it is now if our readers will help make it so by their assistance. We will welcome all ideas concerning not only conduct of the garage, showrooms and repair shop, but those regarding laying out a repair shop, stock bins and storage shelves for parts.

3. That he did not believe free service made the owner feel any better nor had anything to do with making him a permanent customer. That he did not think any one expected something for nothing and the free service merely made the owner think that the profit on the sale was much greater than it really was. He believed their customers would really feel better about paying if they knew the real conditions and had an understanding beforehand.

As to the salesman's statement that the cost was not enough to amount to any-

thing, he had the figures to show that in the past week the free service given would have amounted to over \$35 if charged for at the regular rates.

4. That because everybody else was doing the wrong thing was no reason why they should.

He replied to the accessory man to the effect that if he could not make his profits pay the cost of installations, he had better quit business. At any rate, he saw no reason why the shop should be burdened with the cost of his free work.

The arguments became heated. Mr. Wilton, the manager, seemed inclined to side with the salesman and accessory man and Mr. Brown was getting the worst of it when Bill broke in with a speech that suggested a way out.

Chicago Distributor's Strong Advertisement

In brevity and completeness the argument for the use of motor vehicles used by H. P. Branstetter takes very high rank. Mr. Branstetter, who is Kissel distributor at Chicago, has been running a modest two-column advertisement in Chicago newspapers showing a picture of an "All Year" Kissel town car with the following legend above the picture:

"Due to the manufacturing efficiency and designing ingenuity of the automobile manufacturer of today, they have so perfected the automobile that its economy of operation makes it one of the most economical transportation vehicles now made, if handled properly. From a seasonable product, it has now become one that adapts itself to the four seasons of the year, and maintains an uninterrupted service irrespective of the conditions of weather, assuring occupants thorough comfort at all time.

"If anybody has the slightest doubt as to the place the automobile occupies in the life and work of the nation, let him stand on the street corner in any city and observe the thousands of cars passing back and forth, not only relieving street cars and railroads of thousands of passengers, but enabling people in every line of endeavor to increase their activities through the saving of time which the automobile was made to render.

H. P. BRANSTETTER.

Accessories to Feature Oil Jobbers Exhibition

Several automobile accessory concerns will exhibit some of their products in the show which is to be held at the Congress Hotel in connection with the sixth annual convention of the Western Oil Jobbers Association in Chicago, March 27 to 29. The opening day of the convention will be known as "Producers' Day," the following as "Refiners' Day," and the concluding one will be "Distributors' Day." Mark L. Requa, oil director of the National Fuel Administration, and A. C. Bedford, chairman of the War Service Petroleum Committee, are among those who will make addresses during the sessions.

While the primary purpose of the gathering is business, the social features will not be entirely neglected, and Richard Wotowitch, sales manager of the Crew-Levick Company, has consented to serve as chairman of the entertainment committee. The wives and other women relations of the delegates will be taken to the Great Lakes Naval Training Station the opening day of the convention. Another function will be a dinner dance to be given by the Petroleum Club.

The exhibits to be held in connection with the convention are to be arranged in the Elizabethian Room of the Congress Hotel. This feature of the affair is under the director of Harry Shaw, secretary and treasurer of the Association and general manager of Oil News.

Among the exhibitors are the following:

- Visible Gasolene Dispenser Co., Pittsburgh, Pa.
- Crew-Levick Co., Philadelphia, Pa.
- Milwaukee Tank Works, Milwaukee, Wis.
- Dayton Pump Co., Dayton, Ohio.
- American Oil Pump & Tank Co., Cincinnati, Ohio.
- Butler Manufacturing Co., Kansas City, Mo.
- Columbian Steel Tank Co., Kansas City, Mo.
- Foamite Fire Extinguisher Co., New York, N. Y.
- J. H. Haney & Co., Hastings, Nebr.
- Waxite Manufacturing Co., Minneapolis, Minn.
- The White Co., Cleveland, Ohio.

Some Elgin Specifications.

It has been called to our attention by the Elgin Motor Car Corporation of an error in publishing the specifications of their 1918 model cars, particularly the size of the tires and the bore and stroke of the motor. We are advised that the regular size tires furnished on the standard model are 33x4 and the bore and stroke is 3x4¼.

AMERICAN GARAGE & AUTO DEALER accepts no doubtful advertising. Business-like dealings are guaranteed if the subscriber mentions the **AMERICAN GARAGE & AUTO DEALER** in his letter to the advertiser.

Electric Sign Can Be Altered When Taking on New Cars

Interchangeable Letter Type Has Been Perfected by the Flexlume Company

If motor vehicle dealers were sure their arrangements with the makers of the cars they handle would be permanent there would be more electric signs in Automobile Row of every city.

But there is just the rub.

The sales agent wants to feature the car he handles in his electric sign, for he realizes this is the best way for him to cash in on his investment. The sign brings right to his door all the manufacturer's national advertising.

But suppose he puts up a sign reading "Studebaker" and next season he hasn't the Studebaker agency, but is pushing the sale of some competing car? The sign he has erected is a dead loss to him.

Of course he need not put the name of the car on the sign at all. He can make it read "Smith Motor Sales Co." or something like that, but with all due respect to Mr. Smith this means little to the man on the street. The way a sign can best serve the Smith Motor Sales Company is by telling the world where the particular car they handle can be bought, and this very thing always carries with it the danger of changing cars.

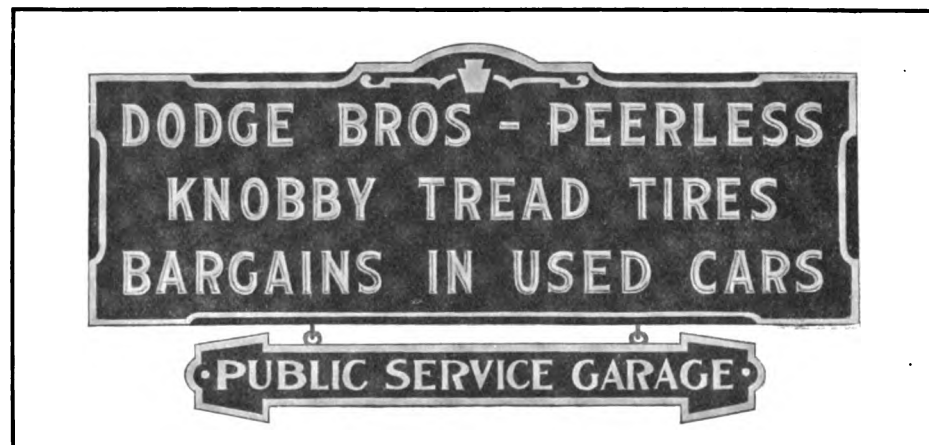
necessary is to take out one set of letters and slip in another. The theatre people make this change two or three times a week. It takes only a few minutes.

With one of these Flexlume interchangeable signs you may change your car twice a day if you like, and still your sign can be kept right up to the minute at the cost of only a few moments work.

But that is not all. With a Flexlume of this kind you can make your sign's story change with the seasons. With just a little trouble you can make it read "Used Cars For Sale" or advertise a special model of some accessory you wish to push. There is no limit to the possible combinations, or to the uses which can be found for electrical advertising of this kind.

There is nothing about these signs to show that the letters are interchangeable. They look just like fixed letter signs. They have the same strong steel frame, the same snow white Oplex letters of raised glass on a dark background. Just like other Flexlumes, they are day signs as well as night signs.

One point about Flexlume signs which has attracted a great deal of attention dur-



One of the Possible Flexlume Combinations

Recognizing this need in the automobile field, The Flexlume Sign Company of Buffalo, N. Y., has adapted its interchangeable letter signs to meet the needs of the automobile sales agent. The Flexlume folks have perfected a type of sign which will suit any automobile business—a sign with interchangeable letters instead of fixed letters.

These interchangeable letters will be best understood by reference to the Flexlume signs used by theatres. Each letter is a unit. Each has a certain standard width. The letters simply fit into a frame, and if you wish to change them all that is

ing the recent lightless nights is the fact that they are not dependent upon their own illumination for effectiveness. Their smooth, raised, white letters on a dark background act as reflectors, with the result that the Flexlumes stand out prominently while others signs are submerged in shadow.

Operation of a new automobile freight service between Springfield and New York has been started to help solve the railroad transportation problem. A five-ton truck will be operated in each direction and, if successful, more will be added.

Welding, Cutting and Brazing

Method of Preheating Large Cast-Iron Pipe

By David Baxter.

The accompanying picture shows plainly the manner and method of preheating a large casting preparatory to welding. This job was a cast iron pipe 14 feet long, 12 inches in diameter, of about $\frac{7}{8}$ inch metal thickness. When the casting was poured in the foundry department, it did not run together perfectly on top near the middle. This left an irregular hole about six or seven inches in diameter, which had to be welded in order to save the casting. The welding was decided upon in preference to re-casting the pipe. And it proved to be much cheaper.

The job was preheated outdoors on account of lack of room in the welding shop. First the pipe was raised a foot or so off the ground as shown in the picture. Then a sort of oven was built of fire-brick

The asbestos covering served to confine the heat and to protect the torch operator, as the burners were kept burning throughout the welding operation. In absence of a patent burner the preheating would have been done with a wood and charcoal fire. A grating would have been built-in near the bottom of the oven and cracks would have been arranged in the walls to allow air to pass upward through the fire, carrying the heat around the pipe.

The welding was not started until about 18 inches of the pipe was red hot. Previous to the preheating the pipe was packed with molding sand and covered with a layer of asbestos, level with the lower edge of the hole. This made it easier in welding across the hole to keep the weld level.

As soon as the job was hot enough part of the asbestos was torn away to enable the operator to work.

The welding was accomplished in the usual way, with a long torch equipped with a large size tip. Firstly to protect

Never wear anything but glass goggles: the celluloid kind take fire too easily and may cost you your eyes.

Always wear goggles of colored glass when welding; the eye-strain may be slow but it is certain.

Don't allow greasy waste or trash to accumulate in the welding room; oxygen won't burn, but it will cause a fire to burn fiercely.

Don't use oil of any kind, even white lead or soap, on the fittings connecting the oxygen drums; oxygen under certain pressure and velocity coming in contact with oil will cause a violent explosion.

Don't monkey with any of the valves or regulators while holding the flaming torch. There may be a leak that you don't know about.

Examine the generator and gauges at frequent intervals. Any kind of machinery will wear out in time, and corrosion may be working from the inside.

To throw away the smallest bit of filler is absolute waste. It may be welded to a longer rod and entirely used.

Cause of Rough Edges in Cutting

Question: I saw some cutting that had been done with the oxy-acetylene torch which was as smooth as it could be done with a saw. Now, the cutting that I do is more or less ragged and irregular. What causes this?—Garage, Minn.

Answer: No doubt your trouble lies in the way you handle the torch. When cutting, the torch should move onward at exactly the same speed all the time; this speed is regulated, or rather, governed, by the pressure of the oxygen, which is in turn governed by the thickness of metal to be cut. The proper tip should be chosen. Then the end of the tip should move along at the proper height from the metal; this distance should be the same all the time.

The torch should follow the line to be cut; do not allow it to waver. Each little waver or hesitation of the onward movement will cause what is termed a ragged place. If you do not use what is called a drag-nose tip you should use some device to rest the torch upon so it will move steadily the correct distance from the metal. The metal should all blow away in form of sparks if the measures are correct.

There are several devices having wheels or slides to aid in manipulating the cutting torch. Or one may devise something to serve the purpose, such as stretching two wires taut along the line of cutting. Wedge these wires a distance above the metal to conform with some part of the



around the defective spot. The bricks were placed loosely without mortar, to form an enclosure about two feet square, extending beneath and up on both sides of the pipe. The top was then covered with asbestos paper, and the job was ready for the preheating fire.

The preheating was done with a double-generator Hauck kerosene burner. Some brick were removed to admit one of the generators, as shown in the photograph. The other burner was arranged in the same way on the opposite side of the pipe. One burner was placed to throw the oil flame up over the pipe, and the other to throw the flame against and under the pipe. In this way the preheating flame was made to entirely encircle the section to be welded.

the operator from the heat of the preheating fire, and secondly to furnish a maximum amount of heat in the welding flame.

The job was finished in two hours, using ten pounds of filler rods. It would have cost nearly ten dollars to re-cast the pipe, whereas the welding cost approximately three.

Torch Operator Pointers

Wear cotton gloves instead of leather ones. They may be kept cool by dipping in water; this is a real convenience on heavy welds.

Keep a gas jet or a lighted candle near the welding table; it saves a lot of time and is no more expensive than matches.

torch that will hold the tip the proper distance away. Keep this in mind: you are in effect blowing a slot through the metal. If you move the pressure from one side to the other, or stop moving forward the fraction of a minute, you will blow a notch in the side of the slot.

Just suppose you were moving the flame along a slot already cut the width of the flame. Aim to have it move along the slot so the edges of the flame just graze the sides of the slot. You can imagine the damage if you pause or swing the flame to one side.

Another thing: we infer that you are cutting metal about one-fourth to one-half inch thick. Have the sheet of metal so placed that the flame may blow the cut-out metal clear through and out the opposite side. Do not place the sheet flat on a table or the ground. It will clog up and cause trouble if you do.

A little practice and careful attention to these details should enable you to cut as smoothly as any one.

Figuring Costs of Welding Jobs

Question:—I would like to have some simple form for keeping tab on costs of different jobs. Most of the forms I have seen are too complex and require too strict attention to details for the average one-man shop. Can you give a simple form which may be printed on a tag or small card that will give a fair estimate of what a job costs?—Anderson, La.

Answer:—If one is to know just exactly what he is doing in the way of making money he must pay attention to details. But this seems to be next to impossible in the hundreds of repair shops where one man attends to many things; he would lose more time figuring than would pay

for an accurate cost system. However, he must have some sort of system in order to do justice to himself and to his customers. The following card should give a fair estimate with a minimum of time required to keep the costs:

This system cannot be absolutely accurate because you do not know just how much of each kind of gas you use unless you have meters or other ways of measuring. However, the card is arranged merely to serve as a close estimate on the work done. The success hinges upon keeping track of the hours. It is necessary to learn the average amount of the different gases used per hour and the cost of each. This can be done by keeping track of the number of hours a tank of gas lasts. We know how much a tank costs, so we may figure what the cost is per welding hour. It is well to make a list of these hour-costs and tack it up in a convenient place.

To the list may be added the cost per pound of filler, flux and fuel, etc. It is but the work of a moment to set the hours opposite each item and total it under "Amounts" after the job is finished. Add the amounts for the grand total. Opposite the item "Incidentals," put filing, painting, or other finishing or work aside from actual welding; and any material not commonly used on all jobs. The item of power is for jobs that require the use of power for grinding, etc. To the grand total add a certain percent for overhead expenses such as rent, taxes, up-keep on machinery, etc.

You now have a fair estimate of the cost of the job. To which you must add your profit. This profit should include a percent for hazard always connected with any business where gases are used under heavy pressure. It is also fair to consider the actual saving to the customer, which is often more than just the cost of a new part.

Oil Fields of the United States.

BY HENRY L. LEVICK, SECRETARY
CREW LEVICK CO.

The oil-producing territory of the United States divides itself naturally into four principal divisions. It might be interesting to roughly outline the fields and the principal crudes produced by each.

The first main division, designated as the eastern fields, comprises those located in Pennsylvania, West Virginia, New York, Ohio, Indiana, Illinois and Kentucky. The crude which is produced in these fields is of a high grade, from which both gasoline and lubricating oil can be derived.

The Pennsylvania field not only includes the wells located in Pennsylvania, but the operations in West Virginia, New York and the eastern part of Ohio as well. This is the oldest of all the fields and is the one in which petroleum was first discovered in 1859.

Pennsylvania crude is much superior in quality to others, and is quoted at a much higher figure. For about ten years Pennsylvania was the only petroleum-producing region of the world.

The second main division, known as the mid-continent fields, comprises those in Oklahoma, Kansas, northern Louisiana and the Panhandle field in northern Texas. The mid-continent fields in recent years have held the attention of the world. This territory literally overnight became the most productive in America for high-grade crude.

It was in Oklahoma that the great Cushing pool was discovered. Its production of splendid quality reached gigantic proportions during early summer of 1915, with an approximate yield of 300,000 barrels a day, together with the Shamrock pool.

However, as rapidly as they came into prominence they began to diminish in production. They are again on the uptrend, producing about 110,000 barrels a day.

The most promising fields at the present time, perhaps, are the Augusta and the El Dorado in Kansas.

The crude from northern Louisiana and northern Texas is similar in its more general characteristics to that obtained from the fields of Oklahoma and Kansas.

The third main division is known as the Gulf Coast, consisting of several fields of importance, situated around the Gulf of Mexico, principally in Texas. The crude from this territory is of an asphalt base. While not adapted to the manufacture of steam cylinder oil, it can be used for certain lubricating products.

Fourth main division is in California, which produces crude poorly adapted for lubricants, and from which very little gasoline is obtained. Its chief use is as a fuel oil. California prices for crude fluctuate, regardless of the value of other crudes. California has the largest production of any state in the Union. Chief among the other fields is the Wyoming.

Customer's name	Date....., 19....
Order number	Job name
	Hours. Amount.
Oxygen	
Acetylene	
Preheating gas, etc.....	
Operator	
Helper	
Power	
	Quantity.
Filler	
Flux	
Incidentals (...Kind....)	
Totals	

Vreeland Heads Truck Firm.

E. E. Vreeland of New York City has been elected president of the Abbot-Downing Truck & Body Company, at Concord, N. H., manufacturer of Concord motor trucks. The Abbot-Downing concern is

an old one, having built stage coaches years ago and made the original "Deadwood" coach used by "Buffalo Bill," W. F. Cody. Mr. Vreeland has been treasurer and advertising manager of the Fulton Motor Truck Company at Farmingdale, Long Island, N. Y.

Car Dealer Cuts Overhead by Taking on Truck Sales

Louis Geyler Company Finds That Sole Extra Un-productive Expense Was for Raising Height of Service Station Doors

Being of the belief that the time has come for passenger car merchants to enlarge their selling fields, the Louis Geyler Company of Chicago has taken on the distribution of the Diamond T motor trucks. Mr. Geyler says he has every reason to think the venture will prove successful for his firm, especially as he already has 80 Hudson sub-dealers and more than the same number of dealers who sell the Dort. He expects many will handle the trucks.

Mr. Geyler thinks it is a logical move for passenger car selling organizations and distributing concerns to take on truck selling. He points out the fact that this is a good business move because the division of overhead cost is very important in that it has a tendency to keep on rising in spite of all efforts to prevent it.

In taking on the distribution of the Diamond T trucks, the sole item that could be charged to overhead expense was having the door frames of his service station raised a couple of feet to permit trucks with high bodies to go in and out. The extra salesmen, service mechanics and stock room attendants added to his pay roll are all producers.

New Prospects in Both Lines

The rule as to prospects works both ways in Mr. Geyler's opinion. There were about 600 Diamond T truck owners in his territory when he made arrangements to handle the truck. The personal and friendly relations to be established with the executives of the concerns using these trucks, Mr. Geyler thinks, will result in the sale of many Hudson and Dort passenger cars. On the other hand the hundreds of owners of Hudson and Dort cars include in their ranks a great many men who are keenly interested in the subject of motor trucks.

In addition to his retail stores in Chicago, at Michigan avenue and Twenty-fifth street, and in Wilson avenue on the north side, Mr. Geyler also has a showroom in Peoria. He has a big service station at Indiana avenue and Twenty-fifth street. He is maintaining a fleet of six trucks for service and lending purposes. He has a force of mechanics who can, and will, work all night any time it is necessary to do so in order to keep some owner's truck in commission when it is badly needed.

Mr. Geyler declares his firm conviction that passenger car dealers can succeed as

merchandisers of trucks provided they make certain that the customers' wants are properly cared for. He deplores the tendency of some sellers of trucks to cut prices in order to obtain orders from prominent concerns, saying that prices must be maintained if the dealer is to be in a position to continue to give proper service to customers.

Hugh Chalmers Acts for Car Firms in Washington

To further co-ordinate the war needs of the government with the capacities of the automobile plants, members of the National Automobile Chamber of Commerce at their session in New York March 7 decided to establish a general headquarters at Washington in charge of Hugh Chalmers, vice-president of the association and chairman of the Chalmers Motor Company.

For some time work of this kind has been cared for by the Automobile Industries Committee, which it was voted to dissolve and to have the automobile manufacturers represented at Washington by a vice-president and staff of the organization. At the headquarters will be engineers to help manufacturers in connection with government work.

A vote of thanks was extended to the members of the Automobile Industries Committee for the work accomplished at Washington.

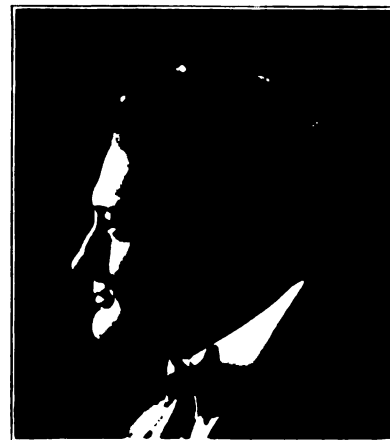
A resolution was passed endorsing the work of the newly formed Highways Industries Association. William E. Metzger and Windsor T. White were appointed to represent the motor car and truck manufacturers in that organization.

Because of the severe weather and Monday closing orders, the paid attendance at the New York and Chicago shows, for the first time in seventeen years, showed a falling off from previous records. The reports of the dealers, attendance and business transacted, however, were almost on a par with previous affairs.

There were reports from committees on patents, traffic, good roads, exports and motor trucks, with a meeting of all the motor truck interests held in the afternoon, when plans were suggested for further aid to the government in transportation matters and for the truck industry generally.

Allen's Sales Manager Wins Minneapolis Bride

Les W. Place, general sales manager of the Allen Motor Company, is married. Automobile men throughout the country will read with interest the announcement of the marriage of Miss Vera Clark, daughter of Herbert J. Clark, of Groveland terrace, Minneapolis, to Mr. Place, recently, at the bride's home in Minneapolis.



Leo W. Place.

Mr. Place not only heads the sales organization of the Allen industries, but is also sales manager of the truck division of the Turnbull Motor Truck & Wagon Co., Defiance, Ohio.

After passing his boyhood days in Hamilton, Ohio, Mr. Place became connected with the General Motors Company, and for years was closely associated with W. C. Durant. During the two years previous to the present war, he made two trips around the world for the General Motors Company, visiting nearly every civilized country. Mr. and Mrs. Place will make their home in Fostoria, Ohio, headquarters of the Allen Motor Company.

Changes in King Staff.

Several changes have recently been made in the executive staff of the King Motor Car Company at Detroit. These include the following: Vice-President and General Manager T. E. A. Barthel, succeeded by William Burgess Nesbitt as vice-president and J. B. Siegfried as general manager. Chief Engineer T. P. Chase, no successor appointed; Joseph D. Porter, New York branch manager, succeeded by E. A. Scheu; J. A. Welch, Detroit branch manager, succeeded by W. G. Walls; C. J. Pitner, Kansas City branch manager, organization taken over by Noyes Killy Motor Company. H. C. Bradfield, the publicity manager, has also resigned. He has been with the King for the last three years, coming from the Cole Motor Car Company.

Mechanical and Engineering Problems

Noise in Rear Axle

Question: Perhaps you can tell me something about rear axle adjustments. Every once in a while I get a car in and find that there is a noise in the rear axle. I have tried different adjustments and sometimes can get the noise out and sometimes cannot. I find I do better with a new car than with an old one. Is there any exact rule to follow in making these adjustments that can be followed in all cases?—J. F. C., Ind.

Answer: I suppose the noise you mean is the gear hum or grind in the differential. This is usually caused by a too tight meshing of the ring gear and the drive pinion or else by an uneven or sprung ring gear. A good, healthy hum is not objectionable, but a grind is. I have never found two sets of gears that would give the same results on the same adjustment except in new sets. You will have to use an adjustment to fit the case in most instances.

One of the best known gear manufacturers has a method of testing and adjusting gears that gives excellent results, but it would be useless with worn gears. In the case of an irregular grind the ring gear should be tested to see if it is sprung. I have found one or two which had small shavings of iron between the gear and the differential case to which it was riveted. These shavings seemed to have come from the rivets and were probably made when the riveting was done. Also look for a sprung drive shaft when an irregular noise develops. If it is necessary to change one gear I think you would find it would pay to change both.

Strength of Welded Shafts

Question: A friend of mine had an argument with me the other day about repairing broken parts, and we both agreed to ask some one who knew and see if we could get some first-hand information, so I am coming to you. I claim that welding of such parts as broken crankcases, water jackets, etc., is all right, but when it comes to crankshafts, camshafts or other such parts, an accurate job cannot be done and the repair is not as strong as the rest of the piece. Have you done any such repairing, and how did it come out?—C. M. N., Ill.

Answer: I personally never tried to repair a broken crankshaft, but have had four or five welded. There is no reason why, if the job is done properly, the repair should not be as strong as the rest of the part. If the shaft is properly aligned, it should be accurate after cooling. If I remember right, I never had trouble with more than one, and at the time I consid-

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

ered it a poor piece of work. On the other hand, I once had a shaft broken rather close to the weld, but not in the weld itself.

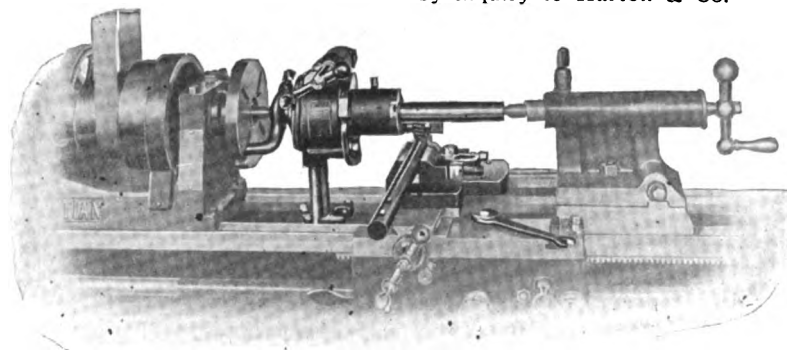
Leaks in Intake Valves

Question: I wrote you some months ago about stopping leaks in intake valve stems on account of wear in the stems and guides and you wrote me to put on some kind of a washer, but I have forgotten just what it was and have lost your letter. Will you tell me again? The car is a 1915 Buick.—F. K. J., Mich.

Answer: The device I probably recommended was the felt washer on top of the valve cage and held in place by an auxiliary spring inside the regular valve spring. The washer should be slightly larger than the top of the valve guide and should have a hole through the center of the proper size for the valve stem to slide in. Take the spring off the valve, slip the washer over the stem until it rests against the top of the guide, put on the light auxiliary spring and put back the valve spring. One end of the auxiliary spring rests against the felt washer and the other end against the upper valve spring washer. This device makes a sort of packing around the stem which helps to cut down leakage. A better scheme is to put in new valves and cages.

Fox Keyseating Attachment.

So many cars are on the market and so many models are no longer made that automobile repair shops are fast equipping themselves to make new axles, drive shafts, etc. This work, including keyseating, squaring ends and Woodruff keyways have made a big market for the Fox Improved Lathe Keyseating attachment, a cut of which is shown.



In addition to the above, the Fox attachment does milling, slotting, and much other work. It will fit any lathe from thirteen to twenty inches and can be attached with no trouble. The above information was furnished by Sunderland Machinery & Supply Co., Omaha, Neb.

Albany Dealers' Show Produced Many Sales

Better business than ever before was reported by all of the exhibitors in the annual show held by the Albany, N. Y., dealers in the State Armory February 16 to 23. The attendance was not quite so large as that of last year, but a larger proportion of the visitors went to the show to buy cars. The E. V. Stratton Company, in particular, sold twice as many Hudsons as during the 1917 exhibition.

No trucks or tractors were displayed, owing to lack of room. A few trucks were shown last year, but were barred this time because it resulted in some of the spaces being very much crowded. Much interest was evinced in used cars, which were not supposed to be displayed. But a few of the exhibitors did show some rebuilt and refinished vehicles, of which a number were disposed of while the show was in progress.

Harton Money Saving System.

Thomas J. Harton & Co., 212 Church St., New York City, have solved many book-keeping problems for garage owners. In general, the business man is not a book-keeper and the garage man is no exception. Also, the average garage man does not need a book-keeper if he has a simple system of account-keeping. The Harton system can be used, if necessary for a complete set of books but is easily understandable by the average employee. The system is based on original and duplicate accounts, one of which is used as an original bill to the customer and the other is used for ledger posting. There are numerous other advantages which may be learned by inquiry to Harton & Co.

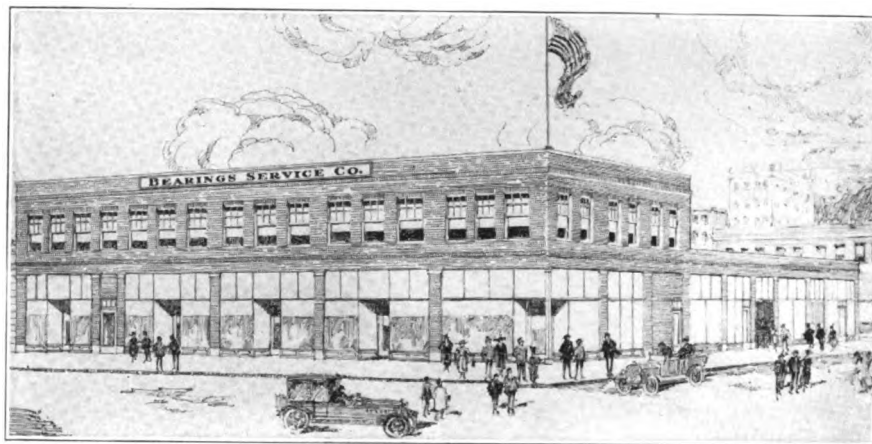
Bearings Service Company Goes to Larger Quarters

President Lane Says Rapid Development of Its Business is Due to Promptness and Reliability

The Bearings Service Company, with general headquarters at Detroit, will soon move into new and larger offices. This building is located at the corner of Cass and Willis avenues in the heart of the new automobile service section. The Detroit service branch of the company will occupy quarters on the ground floor. The entire

expect that motorists will appreciate service of this kind and in their appreciation we find the reason for the great development of the Bearings Service Company.

"We expect to be in our new building, which will give us twice the space we now occupy for our general offices, about April 1."



New Detroit Home of Bearings Service Company.

second floor will be for the exclusive use of the general offices.

Although this is a young company, dating its start in September, 1916, its history has been one of remarkable development month by month. In September, 1916—just eighteen months ago—the organization consisted of general headquarters and nine branch service stations. Today we find in over 275 of the most important automobile centers in America either a branch service station or an authorized agency of the Bearings Service Company, and it is planned to increase this number to over 500 in the next few months.

"The reason for this unusual growth," said R. S. Lane, president of the company, "is found in the extraordinary promptness and reliability of the service we render. Having been appointed official national service representative by the manufacturers of Timken, Hyatt and New Departure bearings, we were furnished by these manufacturers with engineering records and data that enable us to supply exactly the correct bearing part for any make of motor car, motor truck or tractor in which these bearings were ever installed. These records, together with the complete stocks of bearings kept in every branch, enable us obviously to give service that is not only exact but prompt. It is only natural to

Jenkins Spring Company Moves Plant to Indiana

A new and important step in the progress of an automobile service which has become nation wide, was the removal of the general offices of the Jenkins Vulcan Spring Company from St. Louis, Mo., to Richmond, Ind., March 10. An immensely increased demand for the Vulcan Spring caused the change, and the new plant has already proved its capacity for an output exceeding anything in the past history of the company.

The Richmond factory is not only larger but is equipped with the most modern spring-making machinery and is located in close proximity to the supplies of raw materials which enter into the Vulcan product. The company has anticipated war conditions by laying in a large stock in all these lines.

The Jenkins Vulcan Spring Company makes a spring which is immediately adjustable to any car, and a distinct and separate spring which replaces any make of spring on any machine. Its service has been described as "the standard of spring replacement," and 3,000 dealers now handle it.

The company's Texas branch has been moved from 708 Commerce street, Fort

Worth, to 209 South Houston street, Dallas. It is in charge of Messrs. Egan & Rhame, carries a full stock of all numbers and ranks high in the Vulcan organization for the thoroughness and quality of its service.

Ford and Maxwell Prices Are Raised

Retail selling prices have been raised by both the Ford Motor Company and the Maxwell Motor Company. The new figures for the Ford chassis, roadster and touring car became effective February 23 and the Maxwell increase went into effect March 1.

The production of the immense Ford plant has been cut from 3,000 to 1,500 daily, and as the old prices were figured on costs for the larger output, the raise has been expected. The chassis has been advanced from \$325 to \$400, the roadster from \$345 to \$435 and the touring car from \$360 to \$450. No change has been made in the price of the truck chassis.

The Maxwell officials state their increase has been made necessary by reason of higher production costs and curtailed production. Their increase affects both cars and trucks. The new figures are as follows: Touring car, \$825; roadster, \$825; Sedan, \$1,275; six passenger town car, \$1,275 with wire wheels and \$1,175 with wood wheels; all weather top, \$935; truck chassis, \$1,085.

Chicago Show Re-Named; Trade Officers Elected

At the annual meeting held March 11, members of the Chicago Automobile Trade Association adopted "Exchanged Car Show" for the exhibition to be held at the Coliseum March 30 to April 6. Joseph F. Davis, retiring president of the organization, received a watch as an appreciation for his two years' service as president.

The election of officers resulted as follows: George H. Bird of the Bird-Sykes Company, Paige dealer, president; C. R. Dashiell of the Dashiell Motor Company, Dodge distributor, succeeded himself as vice-president; Thomas J. Hay of the Thomas J. Hay Company, Inc., Chandler dealer, secretary, and Henry Paulman of the H. Paulman Company, Pierce Arrow dealer, treasurer. J. F. Davis of the Winston Company, who retired as president, automatically became a director for one year. W. J. (Dan) Boone, Moline-Knight distributor, is a holdover director, whose term does not expire until next year. E. P. Rowan was elected to fill the unexpired term caused by the resignation of Director H. S. Gardner. L. A. Peil of the Mitchell Automobile Company and E. J. Kilborn of the General Motors Truck Company complete the list of directors.

Big Success Rewards Dealer's Sales School

Unexpected success rewarded an instruction school for salesmen held by Harry Newman, Maxwell and Chalmers distributor at Chicago. The course lasted about eight weeks, and in all sixteen sessions were held. The school was started because it was found on analyzing the salesmen's reports that a period of from 30 to 60 days elapsed from the time a man started work and the day when he began to produce results in orders for cars.

Mr. Newman thought a good deal of the instruction which the salesmen should have could be better given in a class room at night as part of a regular course than during the day on the show room floor. At different times the salesmen candidates listened to talks by Mr. Newman himself, M. C. Van Allen, retail sales manager; H. A. Wehmeier, general manager; S. E. Williams, assistant general manager; J. B. Deibler, manager truck department; Joseph Bower, sales manager used car department, and S. E. Knauss, assistant to Mr. Newman.

The high attendance mark at one meeting was 207 men. During the progress of the school nine of the scholars were taken out of the classes and put to work immediately as salesmen on the same basis as the old men, because they showed so much ability. In addition forty more men have been started as salesmen by the company on a trial for a month with a regular salary.

Mr. Newman's idea is that these new men are more likely to do justice to themselves if they have absolutely no worry on their minds regarding their expenses for this period of thirty days. All of them who make good during this period will be permitted to join the Newman sales force and be put on a commission basis, the same as the regular men.

A. A. A. Contest Board Resumes Race Control

Cheering action to race enthusiasts was taken when the American Automobile Association's Contest Board resumed control of speed events. This was done at a special meeting held in New York March 12, when plans for conducting races during 1918 were discussed. The board announced last November that it would suspend its rules during the war.

Many requests from motorists for the resumption of speed contests had its effect. Another element which prompted the A. A. A. to lift the ban was the hearty approval expressed by high government officials, including the nation's chief executive, for the continuation of all sport competitions during the war.

Still another reason was the assurance of international competition, as several of the European champion drivers have sig-

nified their intention of coming over in quest of the money and glory attached to winning the speed classics. Chairman Richard Kennerdell of the contest board said recently that his colleagues would shortly take up the matter of the 1918 circuit.

Three dates for speed carnivals have tentatively been assigned to the Sheepshead Bay Speedway.

Ten Business Rules Good for Any Trade

When a successful Chicago manufacturer was asked recently to explain why his concern has grown steadily since he started it he replied that the best answer was in ten rules he adopted when he began business. These "commercial commandments" are as follows:

Don't lie—it wastes my time and yours. I'm sure to catch you in the end, and that's the wrong end.

Watch your work, not the clock. A long day's work makes a long day short, and a short day's work makes my face long.

Give me more than I expect and I'll give you more than you expect. I can afford to increase your pay if you increase my profits.

You owe so much to yourself that you can't afford to owe anybody else. Keep out of debt or keep out of my shops.

Dishonesty is never an accident. Good men, like good women, can't see temptation when they meet it.

Mind your own business and in time you'll have a business of your own to mind.

Don't do anything here which hurts your self-respect. The employee who is willing to steal for me is capable of stealing from me.

It's none of my business what you do at night. But if dissipation affects what you do the next day and you do half as much as I demand, you'll last half as long as you hoped.

Don't tell me what I'd like to hear, but what I ought to hear. I don't want a valet to my vanity, but I need one for my dollars.

Don't complain if I complain—if you're worth while correcting, you're worth while keeping. I don't waste time cutting specks out of rotten apples.

Elgin Gets First Omaha Sale.

Sale of the first car at the recent Omaha automobile show was made by Frank Cavanaugh of the Motor Company, distributors of Elgin cars, who at five minutes after 1 o'clock, the opening hour, reported officially to the management the sale of an Elgin Six to Milo J. Brink, Jr.

Tractor Bearings Volume Issued by Hyatt Company

"A series of engineering talks that appeared successively for twelve months in the trade papers" is the way the Hyatt Roller Bearing Company introduces its new booklet, "Bearing Engineering for Tractor Designers." The volume contains especially valuable engineering data for the tractor engineer, as has been plainly evidenced by the demand from engineers for reprints of the articles as they have appeared during the last year.

Rather than send out loose-leaf reprint copies of the articles, the Hyatt company has bound them in book form and included diagrams, illustrations and blank memorandum pages. Each of the articles is signed by C. M. Eason, manager of the tractor sales department of the Hyatt Roller Bearing Company, whose knowledge of and application to the subject of tractor designing is well known among the tractor industry's engineers.

The articles include short, informative talks on "The Advantages of Roller Over Plain Bearings," "The Meaning and Value of Flexibility," "Direct on Shaft Operation," "Relation of Shaft Hardness to Capacity," "The Advantages of One Purpose Bearings," "The Principle of Hyatt Roller Construction," "Bearings for High Speeds," "The Ability to Meet Varying Conditions," "The Value of Bearing Length," "Coefficient of Friction and Durability," "The Ideal Bearing." The tractor sales department of the Hyatt Roller Bearing Company at Chicago will be glad to supply copies of this booklet for the asking.

Car Works as Tractor in Harvesting Rice Crop

No more impressive demonstration of the utility of the passenger motor car could be desired than the use to which an Overland automobile has been put in the Texas rice fields.

After five years of service over the mud roads around Crosby, Texas, this car, during the last year, did the work of 24 mules in harvesting the rice crop of the Old River Rice Company at Crosby. The veteran touring car was hitched to a cutter and back and forth across the 9,000-acre stretch of rice it cut a swath that previously required three cutters with eight mules each. The cutter itself was speeded up by a gasoline engine so that from eight to twelve miles an hour was the steady gait of the outfit.

"The outfit is a seven-wheel wonder," declares F. G. Gammon, superintendent of the farm. "It costs us a little over a dollar a day to run the machine, while it costs nearly that much to keep a mule. In its present state of service, the automobile could not be appraised at much more than \$350, because of its five years of use and abuse, while one mule costs \$250.

Worn Cylinders and Pistons Cause Trouble for Owners

Big Plant at Indianapolis is Equipped for Re-Grinding Work to Restore Engines to Proper Condition

A large per cent of automobile owners drive to a garage and buy a quart of oil, trusting to the hasty observation of the service man to supply the correct grade and kind. He may see the make of the car and remember what oil is recommended. He does not know, however, unless acquainted with the driver or is told by him what kind of service the car is put to, nor how many miles it has already traveled, or what oil is the most successful. The result is he gives the owner the best he knows and what is best in his experience, and a great many of this same per cent drive to the garage down the street the next day or following week to have the engine cleaned of carbon. This owner "raves" about the poor oil he purchased from the other garage, and tells all the shortcomings he has ever heard.

Instructions are given that the carbon be cleaned and loose parts tightened, valves ground and the general line which goes with this task, all of which must be completed at a certain time, and emphasis is placed on the must. Perhaps he asks that the oil from the crankcase be saved for him to inspect.

The clause "must be ready" used so often in instructions to the repairman has made it necessary and possible for good work to be slighted. It has given many a repairman extra time on work done before in order to adjust the parts repaired for which he received no pay, and it has given many an owner the wrong opinion of this same repairman and the automobile repairmen every place. The owner may say he is robbed and cheated, and this may happen, but too often the repairman is deprived of his right to do good work, to finish his job.

Hurried Jobs Expensive

No one knows except a repairman what comfort (and it is comfort) it is to be told by the automobile owner to make the repairs on his car as if it were his own, to do a "good job" and not hurry through. Indications point to the fact after the war which, if it comes to pass, will be a big advantage to the automobile owning public. This is, we shall see engine builders, transmission builders and rear axle builders in the repair field. Men who are specialists, just as we have ignition specialists and storage battery men. When this comes to pass, American engines and entire cars will rank with foreign makes in finished product, perfection of workmanship and material. The automobile is made to use, to speed up work everywhere, but

the automobile must be taken care of and with forethought for future service or its advantage is abused.

The government has asked that we save time and money. With the automobile this can be done by using them to speed up work, to insure comfort where necessary to the overworked and tired people. We have to have the automobile; if it is needed, buy it, keep it in service, and keep it up to its highest efficiency.

The car owner wonders how he keeps his engine up to the highest efficiency, and this owner may be one of the large per cent mentioned before, who has the carbon cleaned out and wished to know about the oil and asks to see it. He finds this oil smells more like gasoline than cylinder oil, and it is very dark and full of grit. Perhaps he says "Stung again," vows he will never buy that particular brand of oil again, and thinks all oil companies are selling poor stuff. Every repairman has heard the story. Let us remember in this day the oil used in the majority of cases is the result of exhaustive study and research, and will give results desired on the correct conditions.

Fuel Passes Old Rings

There is a mechanical cause for gasoline and carbon being in the crankcase.

Worn cylinders and loose pistons allow the hot gases to go by the rings, burning the lubricating qualities of the oil. The piston travels on a dry cylinder wall, which results in scoring galled bearings and rapid wear of the moving parts. The oil becomes heavy and gritty with carbon. The carbon even collects in the combustion chamber, causing pre-ignition and a hot engine, loss of compression and power. The spark plug is fouled and the cylinder misses fire. The raw gasoline is passed down into the crankcase, besides the engine receives a severe racking from carrying the idle piston.

This condition comes to most every internal combustion engine during its life and use.

There is but one cure, and this is to regrind the cylinders and fit new pistons and rings. This gives these parts the same fit as when new, will save gasoline and oil, reduce carbon trouble and produce a more powerful and efficient engine. Besides this the cylinder casting has been seasoned by the continuous heating and cooling, for iron seasons just as does wood.

The car owner should not wait for the conditions which have been described to

occur; he should have the work done before these strong destructive forces begin operation. This will help lengthen the life of the engine and entire car for a longer period than waiting to be compelled to make the repair.

Indianapolis, Ind., has the largest exclusive cylinder regrinding and oversize piston concern in the Middle West, the Butler Manufacturing Company, located at 1124 East Georgia street. This firm has the reputation of producing some of the highest work of this kind in the automobile industry. A complete record is kept of all work produced, which insures prompt service in case of repairs being needed.

PROSPERITY HERE NOW SAYS HARRY NEWMAN

"Our most prosperous time is right now," says Harry Newman, one of Chicago's most enterprising motor vehicle distributors. "Weather, war and other worries had no bad effect on our organization in the month of February. During those four weeks we delivered 502 Maxwell cars and trucks and Chalmers cars. It was the best business month in our firm's history."



IN THE SERVICE OF OUR COUNTRY.

James A. Harris, Jr., for many years advertising manager of the White Company at Cleveland, has resigned to accept a commission as captain in the Quartermaster Corps. Captain Harris has already assumed his military duties, having been assigned to Mechanical Repair Shop Unit No. 305.

• •

R. E. Cherry has resigned as chief engineer of the Elgin Motor Car Corporation in order to enter the service of the Government for war work.

• •

Captain Howard Marmon, who in peace times is an executive of the Nordyke & Marmon Company at Indianapolis, now wears the insignia of a major. He is serving as an assistant to the chief engineer of the country's main experimental aircraft station near Dayton, Ohio.

• •

Don Blackmar has entered the United States Signal Corps as an inspector. He was formerly metallurgist for the Detroit Metal Refining Company.

• •

Lawrence Van Buskirk has resigned as manager of the Syracuse Studebaker branch to accept a commission as major in the United States Signal Corps.

• •

Dr. Charles G. Percival, who has been identified with a number of automobile concerns, is now a captain in the Ordnance Department of the army.

• •

R. A. Long, who was chief engineer of the Columbia Motor Company at Detroit, has joined the army and is now Lieutenant Long.

Cars Are Farm Equipment Say Agricultural Owners

The American farmer considers the passenger automobile as an indispensable part of his farm equipment. Without the automobile the farmer would be handicapped to an extent which would seriously affect the highly important food supply.

These facts were set forth conclusively by farmers in their replies to the questionnaires sent out by the Haynes Automobile Company recently. The letters were sent to 1,000 owners, picked at random from every state. The fact that approximately one-seventh of the replies were from farmers indicates the extent to which high grade cars are used by agriculturists.

A Wisconsin farmer states that it would be impossible to get along without his car.

"I am operating two farms twenty-five miles apart. This would be impossible without the Haynes," writes an Idaho farmer.

A South Dakota farmer says: "I own several farms, and do not see how I could handle them without a car."

The war has made great inroads on farm labor, calling for the utilization of every available mechanical device. A Kansas farmer who uses his car to combat this shortage says, "I would be unable to run a farm now, as scarce as farm labor is, without a car."

These answers are representative of the many received by the Haynes company from farmers. The replies have proved beyond doubt that the efficiency now demanded of the farmer cannot be attained without the automobile. Many mentioned the saving in time when going for machinery, repairs and supplies. Almost without exception the farmers declared that their efficiency would be reduced if deprived of their cars.

Negligence of the Owners Is Blamed for Car Thefts

Revision of insurance rates against the theft of automobiles which became effective recently is directly due to the negligence of owners in failing to protect their cars with patented locking devices, coupled with the lax methods of the police in many large cities, according to Ivan Goodrich, president of the Goodrich-Lenhardt Manufacturing Company of Philadelphia.

Figures compiled by Mr. Goodrich's research department show that in eight months of 1917 more than 10,000 cars were stolen in eight cities—New York, Chicago, Philadelphia, Detroit, Cleveland, Toledo, Columbus and Buffalo—of which the police recovered about 6,000.

"In Philadelphia alone, where we are in closest touch with the evil," says Mr. Goodrich, "the automobile casualty underwriters report a loss of nearly \$1,000,000

this year' at least 300 cars a month being stolen.

"Despite warnings, motor car thefts are piling up every day, due, our investigation shows, to the human nature of most owners, who scout the idea that their car will be stolen. In the sale of the Goodrich lockswitch for Fords and the Goodrich steering column lock, made for any make of car, we find that a majority of the purchasers have been victims of automobile pirates.

"For this reason alone in our publicity campaign we have concentrated our efforts

The Salesman's Prayer

"I am capable, I am strong, I am successful. No matter what happens I will succeed and succeed honestly.

"I am a human being, one of the greatest creatures in God's creation and I will use to the full my God-given mental faculties. I have the ability to help my fellows and to help myself and I WILL.

"My health is sound. I will always be strong and healthy and powerful.

"I have a will of tremendous force and I AM GROWING DAILY IN PERSONAL POWER. I will do what I want to do; be what I want to be, and have what I want to have. No matter what happens, I WILL.

"I am a force in Nature and can reach my goal as surely as the river reaches the sea.

"I believe in myself. I trust myself and I trust others.

"My judgment is sound. My mind is keen. My will is strong. I will do my work with masterly efficiency. I can succeed and I will.

"I believe in TRUTH and I will never knowingly speak else in earnestness.

"I will be wealthy. I will render such service to others that I will draw to myself riches. There is opulence in Nature. It was intended for man's use and I WILL HAVE OPULENCE because I will deserve it.

"I am healthy and happy and powerful and strong. No matter what happens I WILL SUCCEED AND SUCCEED HONESTLY."

—From Chicago Evening American.

in trying to drive home the fact that automobile thievery is rapidly becoming a national industry and that unless the owner installs an anti-theft lock immediately his car is bound to be stolen sooner or later. In my judgment, the best thing an owner can do is to buy an anti-theft lock and avoid trouble."

Among the Manufacturers and Executives.

Burt R. Barr has joined the Stewart Motor Corporation at Buffalo. He will act as advertising and assistant sales manager for Stewart trucks. Mr. Barr was formerly a member of the Goodyear tire advertising staff.

George B. Wagner, after actual war experience as a member of the Norton Harjes ambulance corps in France, during which time he drove a Fulton truck, has returned to America. Through admiration of the Fulton truck in France, he sought the Minneapolis dealers and took a position with them, believing that with his experience in Europe as a background, and his intimate knowledge of the Fulton, his would be a successful career as a salesman.

G. F. Bailey is now in charge of the truck department of the Whiting Motor Company, New York. He was formerly sales manager of the Redden Motor Truck Company at Jackson, Mich.

C. S. Pope has been appointed chief engineer of the Elgin Motor Car Corporation. He was formerly with Dodge Brothers at their Detroit plant. Mr. Pope had been assistant factory manager for the Elgin concern for some time before his new appointment.

W. F. Frederick has recently assumed the duties of sales manager for the Gryphon Rubber and Tire Corporation, of New York.

H. C. Fruehauf, general manager of the Fruehauf Trailer Company, of Detroit, announces the appointment of J. Welch as western manager with headquarters in Kansas City. Mr. Welch decided to identify himself with the trailer industry because he believes that trailers will be important factors in solving the transportation problem. He was formerly associated with the Abbott Motor Company of Cleveland and the Interstate Automobile Company of Muncie, Ind.

A. C. Faeh has rejoined the Baker R. & L. Company at Cleveland as advertising manager. He left the Cleveland concern some time ago to become sales and advertising manager of the Osgood Lens & Supply Company, Chicago.

Lue H. Rose, who distributes Chalmers cars from San Francisco, has recently taken on the Truxton truck unit. He also acts as distributor for Brockway trucks.

W. Grossgloss, who nearly lost his life three years ago while driving an automobile in a St. Louis contest, has joined the Elgin sales forces and will be connected with the Elgin Sales Company, of Tacoma, Wash. He has the distinction of having driven the first automobile, an old Case 40, over the Sierra Nevada Mountains, and of piloting the second motor car across the American desert. He announced that he is out of the automobile racing game for life.

Announcement is made that E. A. Bates has been promoted to sales manager by the Findelsen and Kropf Manufacturing Company, Chicago, producers of Rayfield carburetors. He has been at the head of the Rayfield advertising department for several years and will continue to direct it.

Elmer E. Caldwell has joined the Ajax Rubber Company forces at New York as assistant advertising manager. He was formerly a member of the Michelin Tire Company's advertising department.

P. E. Miquelon is now in charge of the Chicago branch of the Zenith Carburetor Company, having been promoted from sales engineering work. He succeeds R. H. Taylor, who has been sent to manage the New York office in place of V. I. Shobe, the new Zenith sales manager.

Making Trucks Last Longer

Dealers and Makers Find Best Selling Argument Is Durability—How This May Be Brought About Is Shown by Goodrich Pamphlet

EVER since motor trucks were first built in 1904, the overload evil has been the most serious thing that truck manufacturers have had to contend with. The very first truck was frequently overloaded and perhaps the last one will be, but in the meantime thousands of motor trucks are passing into the discard each year. Overloading, overspeeding and carelessness in upkeep are daily shortening the life of all types of trucks and the manufacturers' only hope for the lessening of these evils is that motor truck owners and drivers will profit by their costly experiences and effectually reduce these practices to the very minimum if not eliminate them entirely.

Motor truck manufacturers are not dependent, as many may assume, upon the discarding of worn out trucks to enable them to sell new ones. There is no manufacturer who does not point with pride to the oldest trucks of his make that are in service today. The longer the service of his truck, the better the maker is pleased, for then the owner is not only satisfied, but this condition leads to greater sales. There has been no over-production of motor trucks. In fact there has been a shortage each year and this shortage applies to all sizes and types.

Truck builders have tried every conceivable means of eliminating the overload evil. The most universal action in this direction has been an absolute cancellation of the maker's guarantee where the load capacity is not strictly adhered to. Many users make the mistake of thinking that the manufacturers of their trucks are unable to determine that they have been overloaded. It is impossible to conceal this fact, for as trucks are now being built, there is nothing else that will produce the effects that overloading does.

When the truck builders had apparently exhausted every resource for combating overloading, overspeeding and negligence in the general upkeep, the B. F. Goodrich Company attacked the problems from an entirely different angle, in an illustrated article published as an introduction in the

fifth volume of *Motor Trucks of America* which is issued each year by the Goodrich Truck Tire Department.

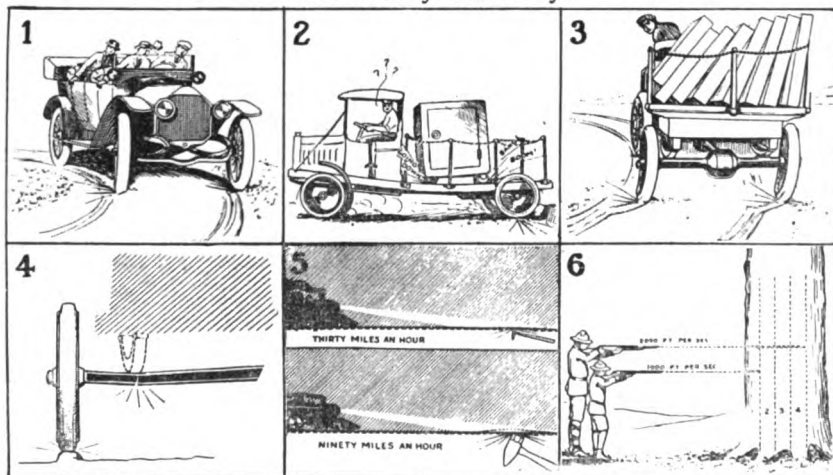
The title of this article is, "Lengthening the Life of the Motor Truck," and the story tells all that its subject implied. In part it reads: "It is of little use to tell the truck operator that he must not overload, must not overspeed, etc. He gets that every week of the month. It is not enough to say 'overloading is bad.' He must be told why it is bad and given actual reasons. Always the human mind asks 'why' and if the reason is insufficient it is not satisfied. But the reasons for overloading are founded upon mathematics, an exact science."

The truck engineer knows the limits of endurance as he constructs the lines and

a demand for the facts told by the story that "Lengthening the Life of the Motor Truck" has been reproduced in pamphlet form and is being widely distributed by the Goodrich Company among thousands of truck drivers and owners who have already inquired for it.

After defining that much misunderstood term, "factor of safety," the article discusses the effects of overloading on every part of the motor truck. It then gives a comprehensive explanation of destructive work of overspeeding. Many people do not know, for instance, that an object having twice the speed of another of the same weight will perform four times as much work. Thus a bullet traveling 2,000 feet per second will penetrate a target four times as deep as one going at the rate of 1,000 feet per

Why Overloading and Overspeeding Will Ruin the Best Truck That Money Can Buy.



1. Rounding the Curve.
2. Two Times an Extraordinary Strain Equals an Accident.
3. The "Skidding Strain."
4. Not Time Enough for the Spring to Act.
5. Three Times the Speed—Nine Times the Blow.
6. What Speed Means.

curves of his blue prints with the aid of his slide rule, his calculus and his technical education, but the driver or the superintendent who is responsible for the operation of a fleet of costly trucks merely knows that overloading and overspeeding are bad. It is not enough.

The Goodrich Company has gone into the offices of the best truck and automobile engineers in the country to get these reasons first hand. They have been classified and stripped of their technical trimmings and put into the language of the truck driver, so that everybody may understand. Heretofore these facts have only been available to technically-trained men.

Those who have read this article in *Motor Trucks of America* have created such

second. This principle is applied to the motor truck and it is shown further that a vehicle traveling at three times its normal speed will suffer shocks which are nine times more violent than normal.

The story now deals with the errors in driving which embraces the selection of gears, management of the clutch, lubrication, etc. It is unknown to many that a piece of steel, however smooth in appearance to the naked eye, will show under the microscope a rough surface. It is the function of the film of oil to fill these multitudes of indentations

and actually prevent the surface of this part from coming into contact with the surface of its partner in work.

Since it is the driver who carries the destiny of the truck in his hands, it is necessary to approach and convince him that his job depends upon how strictly he adheres to the advice that is given him.

One of the surprising features in connection with this most interesting pamphlet has been the increasing number of inquiries from large business institutions operating salesmen's cars as well as extensive fleets of trucks, for the article applies to them. Many of these large operators are placing this story in the hands of their drivers and superintendents in a determined effort to lengthen the life of their cars and trucks.

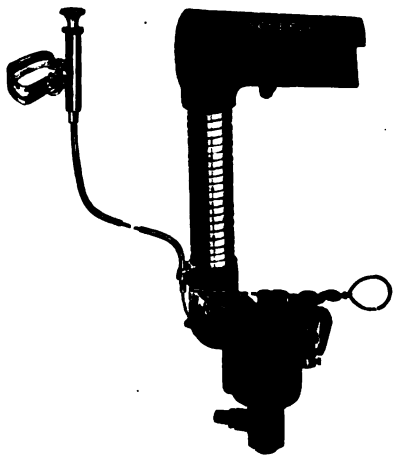
Accessories and Garage Equipment

GEYSER DISPENSERS SAVE TROUBLE.

Elimination of trouble is one of the features of the Geyser visible gasoline dispenser manufactured by the Visible Gasolene Dispenser Company, Pittsburgh, Pa. George B. Nicholson, president of the company, has been told of service station men who have handled 200,000 gallons of fuel without any trouble whatsoever. Some of the advantages of the Geyser over the old style hand pump are as follows: (1) Honest and accurate measure; (2) the purchaser sees exactly what he is paying for; (3) it saves labor, no pumping being required; (4) its speed being able to serve two cars in the time taken to serve one with the old hand pump; (5) no parts to be replaced; (6) the meter, which is placed inside the glass cylinder, and cannot be tampered with; (7) the Geyser dispenser is sold on a thirty-day trial guarantee and if not satisfactory for any reason it may be returned.

NEW SCHEBLER CARBURETOR FOR FORDS.

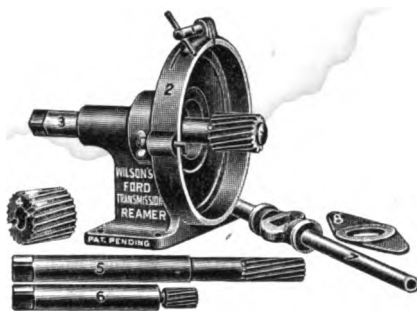
The Wheeler-Schebler Carburetor Company, Indianapolis, Ind., has brought out a new air valveless carburetor for Ford cars. The Pitot tube principle is introduced for the first time in the carburetor. This Pitot tube or improved type of gasolene nozzle is so designed and built that it automatically furnishes a rich mixture for acceleration and thins out this mixture after the normal motor speed has been reached. This furnishes a very economical running mixture at all speeds, together with smooth and positive acceleration.



The "Ford A," as it is styled, has no parts to wear out or get out of adjustment. Two gasolene needle adjustments are furnished, one for low speed and idling and one for high speed. These adjustments have been found advisable to properly handle the present heavy grades of fuel. A double choker is furnished and with these controls a Ford can be easily started under the most severe weather conditions and the mixture controlled from the driver's seat.

WILSON REAMING MACHINE FOR FORD TRANSMISSIONS.

With the use of the Wilson reaming machine for Ford transmissions a transmission can be overhauled in 25 minutes and the job is perfectly done when finished. It is impossible to properly fit these bushings in a lathe, with expansion reamers or by any other method. The drum must revolve ab-



solutely true or the gears will mesh too deep on one side.

The Wilson machine is so constructed that any of the three drums are held in place with a clamp on either side. This holds the drum perfectly rigid and at right angles with the reamer. All reamers are especially designed with spiral flutes and do practically all the cutting on point of reamer. Flutes serve to give final finish, by scraping slightly. The average time required to insert, ream and take out drum is less than two minutes each. The machine is produced by K. R. Wilson, 1018 Main street, Buffalo, N. Y.

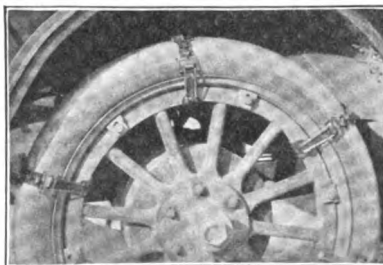
DURKEE-ATWOOD COMPANY NOW HAS 47 RIE NIE PRODUCTS.

Having been engaged for more than seven years in the manufacture of automobile specialties, the Durkee-Atwood Company, Minneapolis, Minn., has continued to enlarge its line until now it has 47 products. It is said that the concern has the most complete line of chemical automobile accessories ever manufactured. These include patches, rubber cement, tire sundries, radiator compounds, enamels, polishes, lubricants, graphite, carbon removers, abrasives and many other articles used by automobile dealers, garagemen and service station operators. The firm has just compiled a new catalogue for the use of dealers, indexed for ready reference.

KIMBALL QUICK-ON ANTI-SKID MUD CHAIN.

An accessory that will be sure to find a ready sale whenever shown to car owners is the "quick-on" anti-skid mud chain produced by the Kimball Tire Case Company, 198 Broadway, Council Bluffs, Iowa. One of them attached to a wheel will generally serve to take a car out of a slippery place, but for continuous running over muddy roads, four or six at equal intervals are advisable to keep a car from slipping sideways.

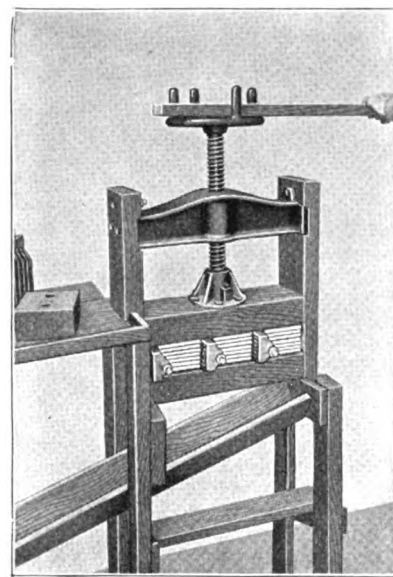
One of the chief advantages is that the



driver need not get out into the mud to attach the chain or clasp. It can be put on with one hand very quickly. The clasp has a cam arrangement by which it is clasped around the felloe and tire so that it presses into the rubber and sticks tight to it. A driver can stand on his running board, place the chain over the tire and pull it back so that the leather protector comes tight against the felloe, then slide the lever through the loop and press the lever clear down, which tightens it on and locks it.

AMBU BATTERY PLATE PRESS SAVES TIME AND TROUBLE.

Service station men who have any battery work will find the AMBU battery plate press a great convenience in that it saves time and prevents trouble. Three groups of plates may be pressed at the same time, so that not is the work properly done but quickly disposed of.



Some repair men have used an ordinary vise to press battery plates. This is bad for the vise, however, as the acid dripping from the plates corrodes and rusts the vise. The AMBU press is produced by the American Bureau of Engineering, Inc., 1018-24 Wabash avenue, Chicago, Ill.

UNIVERSAL BATTERY COMPANY HAS BIG STOCK OF BATTERY PARTS.

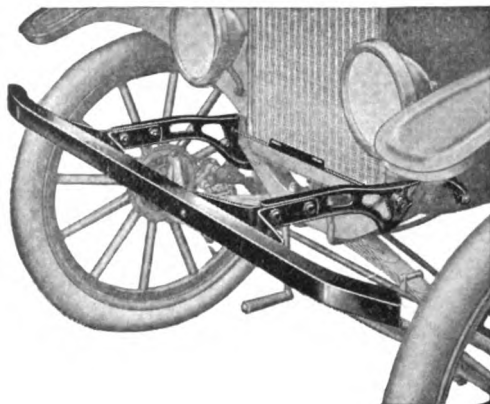
The Universal Battery Company of Chicago is now offering a battery service which will no doubt be greeted cordially by all garage owners, service stations and supply men. Heretofore it has apparently been necessary for those in the automobile repair business to deal with a dozen different makers of batteries and battery parts in order to obtain the hundred and one parts which battery users constantly need. This necessity for dealing with so many different makers has always been a source of considerable irritation and confusion.

The Universal Battery Company claims that this haphazard, unsatisfactory method is now obsolete. The concern states that it not only makes and carries in stock complete batteries, but it also has on hand at

all times plates and parts for every battery for which there is a popular demand. The Universal Battery Company promise complete service in every detail; in a word—perfect service, at its headquarters, 3414 South La Salle street.

SPECIAL FORD MODEL OF STEWART AUTOGUARD.

This model of Stewart Autoguard is designed especially for Ford cars. It combines all of the good features of the regular model, but is furnished with special brackets which makes it possible for dealers to install the Autoguard on Ford cars in a few minutes' time. There is no cutting of metal or drilling of holes necessary to make the installation. All difficulties of installation have been eliminated by the very unique design of this model.



The Stewart Autoguard for Ford cars has many exclusive features. It is a real GUARD for the car, not a common bumper. It has a rigidity, combined with springiness, not found in the ordinary bumper. The Autoguard or channel bar is made of high carbon steel; the spring members are made of high carbon spring steel. A license plate bracket is included with this model of the Stewart Autoguard.

The shock absorbing members consist of two full elliptic springs. This type of spring is found to be superior to the coil spring type. They have more than double the range of spring action and still have sufficient rigidity to resist the effect of and absorb heavy shocks. These springs, which fit in the channel of the Autoguard bar, extend away over toward the ends of the bar.

DISTRIBUTORS ENLARGE TERRITORY.

Jessop & Thompson, 1469 South Michigan avenue, Chicago, have enlarged the region in which they distribute the Manley line of garage and shop equipment produced by the United Engine and Manufacturing Company, of Hanover, Pa. Their territory now includes Illinois, Ohio, Indiana, Michigan, Minnesota, Wisconsin, Iowa, Missouri, North and South Dakota, Kansas and Nebraska. Jessop & Thompson have also been appointed sales representatives for the Ellis-Smith Manufacturing Company, Buffalo, for the same territory except Kansas and the western half of Missouri.

TEN EYCK STARTING SYSTEM FOR FORD CARS.

The Ten Eyck starting system uses compressed air introduced directly into the engine cylinders and employs methods invented by Frank E. Ten Eyck, who invented an automobile hand tire-pump, engine-driven tire-pump and a pneumatic lifting jack. His standing as a pneumatic engineer warrants the attention of Ford owners

to this starting system regardless of what their past experiences with "air starters" may have been.

Many builders of motor cars have steadfastly held to the belief that compressed air is fundamentally the best starting medium for internal combustion engines and have contended that, as soon as the right system was worked out, the "air starter" would regain dominance. In this they agree with Mr. Ten Eyck, who says, "It's all in the system."

The Ten Eyck starting system is manufactured under the Ten Eyck patents by the Air Device Company, 2975 Cottage Grove avenue, Chicago. This starting system proved a center of interest at the automobile shows. The Air Device Company is now ready to make arrangements for the handling of the Ten Eyck system by local automobile dealers all over the United States.

GARAGE TESTING INSTRUMENT.

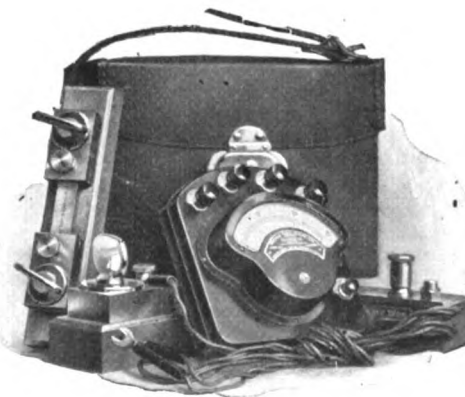
The Weston Model 280 Voltammeter, with external shunts for ampere measurements, shown in the illustration, is one we designate as the Weston Garage Testing Instrument, and is said to be vastly superior to any instrument of its character and size that has ever been offered for sale.

The selection of ranges is that which experience has demonstrated to be the best combination for the large number of garages that feel compelled to limit their electrical testing investment to the purchase of a single instrument.

The instrument is compact (pocket size), has a uniform and legible scale, is extremely accurate and serviceable, perfectly dead-beat, quick in action, shielded from the disturbing influence of external magnetic fields, exceptionally permanent and durable.

It is adjusted for ranges of 30 and 3 volts and 100 millivolts (all self-contained), and is provided with external shunts of 3, 30 and 300 ampere-rating for use in making current measurements.

We may briefly state that the 30-volt range is useful for determining the voltage of the battery and of the generator.



The 3-volt range is of service in testing the individual cells of the storage battery.

The 100-millivolt range may be used to determine the "drop" over segments of the commutator of the motor or generator.

The 3-ampere range is of value in testing the current required by single lights.

The 30-ampere range will denote the current required by the complete lighting circuit, the magnitude of leakage currents, the charging rate, etc.

The 300-ampere range is useful to determine the starting current.

The foregoing are merely a few of the tests that may be made with the instrument, but they serve to show the variety

of tests that are made in a garage, to which any make of automobile and hence any make of electric-starting, lighting or ignition system may be brought for attention.

A full description of the method of making connections for the various ranges accompanies each instrument, and cautions are also given in order to prevent accidental damage to the instrument while making tests.

The price of the Model 280 instrument, as specified, f.o.b. Weston Electrical Instrument Co.'s factory at Newark, N. J., is \$22.50 list, 10 per cent discount for cash.

In some cases it may be desirable to provide a means for measuring direct current line voltage or the voltage of a complete battery of an electric vehicle, and for these purposes an external multiplier for a range of 150 volts is recommended for which the extra list charge is \$3.00.

WOODWORTH CLEAR LIGHT LENS.

The Woodworth clear light lens for automobile head lights is a prism lens especially designed to prevent glare without absorbing light, but by directing its rays where they are most required. The upper half of the lens is so designed that it throws the light to the sides of the road and the lower half is designed to throw the rays down on the road itself. The lens is made in all of the commonly used sizes.



Dealers can obtain a very favorable proposition on these lenses by writing to the Woodworth Manufacturing Corporation of Niagara Falls, N. Y.

SPRING CUSHION TIRE ELIMINATING PNEUMATIC TUBES.

The American Spring Tire Co., 30 West Lake street, Chicago, is now placing the DeVoll Spring Cushion Tire on the market. This spring cushion has been invented and developed not only to eliminate and replace but to surpass the air tube in all its features. Persistent analytical and constant experimental efforts of experts in the mechanical line during a period of seven years, involving the expenditure of a large sum of money, has produced a tire practically perfect in its action and reliability, according to the claims put forward by its makers. This tire is said to offer all the advantages of the air tube and yet completely eliminates all its disadvantages such as punctures, blow-outs, rim cutting, creeping delays and accidents caused therefrom.

By means of reliable tests and actual operation of this tire, it has been proved, the claim is, that it supersedes the air tube tire in strength, reliability, resiliency and durability. This tire is so constructed that the cushioning is effectuated inside of the outer casing eliminating the disadvantages of the "double center," the cause of inefficiency of the numerous spring wheels which have been brought up from time to time to take the place of the pneumatic tube.

This tire is made to fit, without alteration, inside any new or old casing now on the market, and is practically indestructible. It also represents a large economic saving.



Avoid Disputes With Customers

You cannot afford disputes. They are costly in cash and customers.

It will pay to prevent them rather than have to adjust them.

The N. C. R. system in your garage *will* prevent disputes and protect you and your customers.

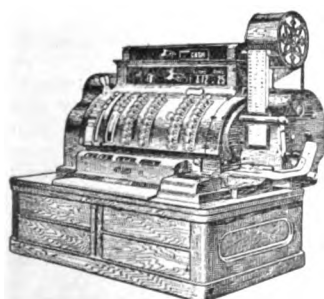
But disputes are only one of the troubles in the garage business.

The N. C. R. system will prevent troubles by enforcing correct records.

It protects your profits.

It enables you to tell right where you stand in volume of sales and profits.

***Install the N. C. R. system in your garage.
For details send this coupon today.***



*Up-to-date National Cash Register
for 4 clerks*

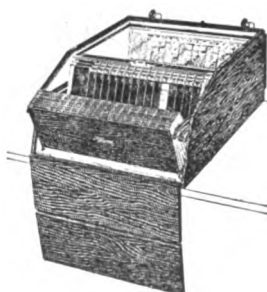
To Dept. 3302

National Cash Register Co., Dayton, Ohio

Please send me full particulars of your cash register for a garage, and the N. C. R. Credit File.

Name _____

Address _____



*N. C. R. Credit File
for 180 Accounts*

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

The DeVoll Spring Cushion Tire is composed of a series of Swedish steel springs made to fit inside of any outer casing, new or old, now on the market, saving the car owner in many instances the necessity of purchasing new casings on account of the fear of a blow-out or a puncture. There can be no blow-out or puncture when the spring cushions are in use. The spring cushions do not come in contact with the casings but are suspended on four roller bearings. The function of the roller bearing permits your tire to take the side thrust the same as the air tube.

Each spring is a unit, free in its action, and at the same time firmly locked in a housing. The core on which the outer casing rests holds the casing to a narrow tread where the casing is thickest and can stand the greatest amount of wear and tear. This makes the whole tire easier to run, steadies the car and causes the engine to run smoother. The cushions are so constructed that all friction is positively eliminated. Rusting is not possible as they are kept lubricated by a strip of brass placed between each spring leaf. In a test of a spring cushion for a tire size 34x4, the maximum of 340 pounds to the unit was reached and as there are six units on the ground at the same time when the tire is in action, it carries a load of 2,040 pounds per tire, or 8,160 pounds to the car. It will give perfect action from 150 pounds to the above figure. The springs have a clock spring temper and will not break.

The DeVoll Spring Cushion Tire is sold under a positive guarantee and the manufacturers are of the opinion that a set of DeVoll Spring Cushion Tires will last the life of the car and were unable to detect any fault or wear after a careful examination of a set of tires which had traveled over 23,000 miles during an experimental test. The car owner saves the entire cost of tubes. By using the DeVoll Spring Cushion Tire he eliminates all blow-outs, punctures, accidents and delays; he increases the present mileage of his tires from the present standard of 37.1 per cent for normal wear and tear to fully 93 per cent as he can wear his tire down to the core. When he wears his casing through, he simply puts new casings on his spring tires. The spring tires will last indefinitely.

Dealers and representatives will find the representation of the DeVoll Spring Cushion Tire a very attractive proposition.

JOHNSTON WINDOW USED ON SHOW CARS.

Evidence that the beveled plate glass curtain window is coming to be regarded as the final touch to a beautiful car is found in the fact that of the 151 open cars exhibited at the New York automobile show and 147 at the Chicago show, 78 and 84,

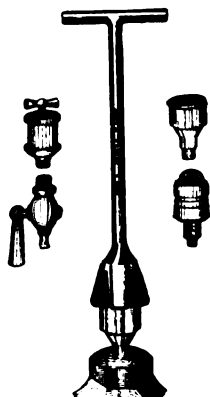
respectively, were equipped with the Johnston plate glass curtain window.

Among the cars now using the Johnston window are the Chandler, Cole, Haynes, Holmes, Jordan, King, Moline, Oldsmobile, Owen, Premier, Stephens, Velle, Nash, Winton, Saxon, Paige, Davis, Lexington and National. One of the features of the Johnston window is the ingenious, patented arrangement by which the plate glass is fastened in a flexible curtain. It may be installed by the use of hammer, tacks and shears, and when set in the curtain, it is unbreakable and rainproof.

The growing popularity of the plate glass window is due to the fact that it gives an unmistakable air of refinement to even the lowest price car. This plate glass window is produced by the Wm. R. Johnston Manufacturing Company, 359 East Ohio street, Chicago.

UNIVERSAL GREASE CUP WRENCH.

A tool which eliminates the annoyance of the daily turning of grease cups has been placed on the market by the Prismolite Company of Columbus, Ohio. It is called the Universal grease cup wrench. It is a great convenience in saving time, labor and temper. The Universal fits all sizes and types of automobile and truck grease cups without adjusting and may be used for various other things about the car, such as turning hot or greasy primer cocks, pet cocks and drain cocks. It is especially convenient for reaching grease cups and cocks placed in unhandy, out-of-the-way places.



With the Universal grease cup wrench, turning grease cups loses its drudgery and the owner is tempted to turn the cups more often than he would under the old method.

SERVICE FOR FLECHTER CARBURETORS.

L. V. Flechter & Company, carburetor manufacturers of Long Island City, N. Y., announce the recent appointment of the following concerns to handle service on

Flechter carburetors: Neptune Motor Company, Chicago, Cincinnati, Portland and Los Angeles; factory branch, 1790 Woodward avenue, Detroit, Mich.; Alex Brunner & Son, Newark, N. J.; Burts Supply Agency, Atlantic City, N. J.

DEFENDER AUTO-LOCK PRICE TO BE RAISED.

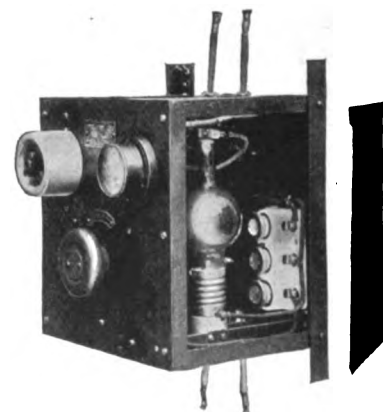
Announcement has been made by the Defender Auto-Lock Company, Detroit, Mich., that the retail price of its auto-lock will be increased to \$4 in the United States and \$5 in the Dominion of Canada. The use of these locks has increased rapidly, as the recognition given to it by the Insurance Underwriters' Laboratories has helped dealers sell them to car owners. The Canadian General Electric Company has been appointed sole distributors for the lock in the Dominion of Canada.

SERVICE STATIONS.

To meet the demand for a device that will transform the 115-volt, 60-cycle alternating current supplied to many garages and service stations into direct current suitable for recharging automobile storage batteries, the General Electric Company of Schenectady, N. Y., has developed a type of "Tungar" Rectifier of 6 amperes, 75-volts capacity.

The claim is that it will charge from one to three-cell storage batteries at a time; tests prove high efficiency, low operating costs, long life and marked ability to meet the various conditions of service. There are no moving parts and there is no fire risk.

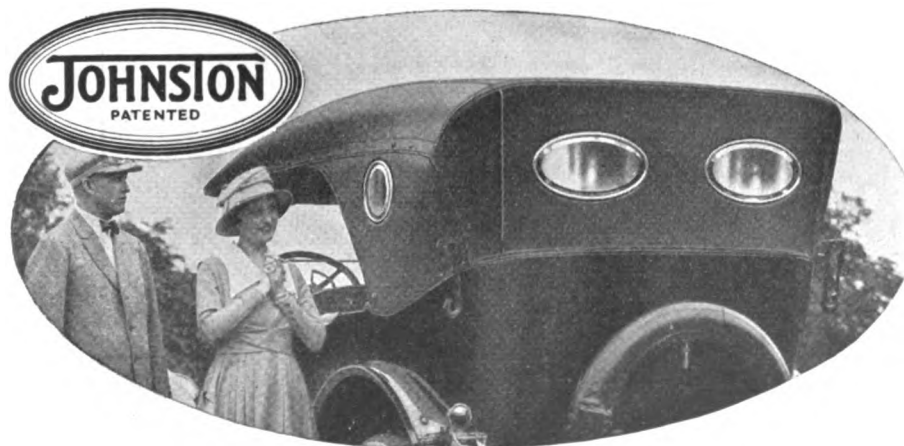
A compensator with 15 taps is attached and a dial switch for adjusting the voltage according to the number of batteries to be charged. The current is instantly adjustable in steps up to six amperes. Simplicity is the keynote of its construction and operation. After the two upper wires are connected to the alternating current supply and the direct current leads coming out of the bottom of the rectifier are connected to the batteries which should be connected in series, turning the alternating current switch will start the rectifier charging without shaking. If the alternating current should



fail the batteries cannot discharge through the rectifier and will start recharging when the current comes on again.

Charging costs about 9 cents per hour per 3-cell battery for about a 13-hour charge when they are charged in groups of ten and about 12 cents per hour per 3-cell battery when charged in groups of five. The efficiency of the rectifier is said to increase and recharging costs per battery are lowered as the number of batteries on charge is increased toward the 30-cell, maximum capacity of this type "Tungar."

The entire apparatus, including all live parts, is enclosed in a perforated, japanned finish, sheet iron casing.



**Garage Owners
Service Station
and
Supply Men**



**Spring Is In
The Air
It's Time
To Repair**

Universal Battery Service

It assures you bigger profits.

Universal Battery "Parts" Service provides complete service in every detail—plates, terminals, connectors, separators, etc., as well as complete batteries.

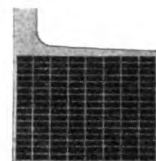
Send for our interesting and instructive catalogue and price list—today.

Universal Battery Co.

3414 S. La Salle St.

Chicago, Illinois

Makers of Universal Starting and Lighting Batteries. A complete battery for every popular make of car and a repair part for every standard make of battery. We also manufacture vehicle plates and parts for both pleasure cars and commercial trucks.



Garages, Service Stations and Owners of Electric Cars and Trucks

Our new, modern method of changing A. C. to D. C. for battery charging is far superior. The best by test.

**HIGHLY EFFICIENT, ECONOMICAL, RUGGED,
VERY EASY TO OPERATE
NO EXPENSIVE INSTALLATION NECESSARY**

THE *Breco* CONVERTER

is designed to meet the exacting requirements of hard, every-day service. It has been fully tested by years of practical application and has the endorsement of the highest authorities. It will give you genuine satisfaction.

**PRICES: FROM \$24.00 UP SIZES: FROM 1 BATTERY UP
BATTERY CHARGING**

Becomes a very simple, inexpensive and mighty profitable matter with the BRECO CHARGER.

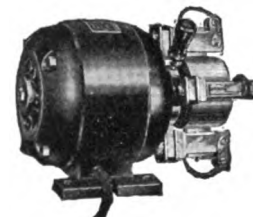
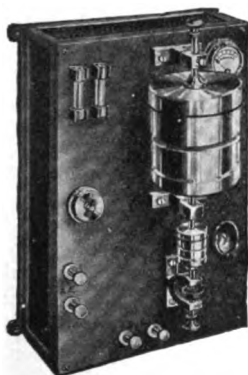
Write for our Catalogue No. 22

The Breco Electric Company

SOLE LICENSEES

206 HURON ST.

TOLEDO, OHIO, U. S. A.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Rendering Profitable Service

It Is a Definite Factor in Garage Costs and Is To Be Charged for Exactly the Same as Material Costs

By D. E. WHIPPLE

Service is the key-note of a paper recently prepared by D. E. Whipple, central district manager of the Anderson Electric Car Company. Every word Mr. Whipple writes is worth reading and of special interest to the subscribers of American Garage and Auto Dealer is the contract form adopted by his company for monthly inspection and service.

Even after two careful readings the contract form seems to cover about every contingency that could arise between a garage owner and a car owner. Better than that, it covers in advance the points on which there may be controversy. The only question seems to be whether the contract form covers all the points it should. The American Garage and Auto Dealer unhesitatingly endorses the principle of contractual relations between the garage and car owners on all except transient business and will as unhesitatingly advocate the form which receives the endorsement of its subscribers. Read the contract carefully and send in your opinion.

The Inspection Form.

Taking only a few liberties with the Anderson car form, it reads as follows: "MONTHLY INSPECTION AND SERVICE CONTRACT.

This Agreement Made and Entered Into at....., this..... day of....., A. D. 191...., by and between..... doing business within the State of..... (hereinafter called Company), and..... owner of..... of....., who is the (Description)..... (hereinafter called owner), Witnesseth:

Whereas, it is of mutual advantage to the parties hereto that the..... automobile of said owner be operated with the greatest efficiency and the lowest possible maintenance cost, and

Whereas, the Company, by reason of its superior facilities and the volume of its business and the efficiency of its skilled employees, and by means of regular inspection and prompt minor adjustments and repairs, is enabled to minimize the maintenance cost and to raise the service efficiency of said..... automobile, and

In consideration of the making by the

owner to the Company of the payments hereinafter provided to be made and the performance of the covenants hereof by the owner, the Company hereby agrees to furnish the following service:

Grease and oil entire car where provision for such is made, except differential gear and motor. (These parts are cared for when car is overhauled, which should be done twice yearly.)

Adjust chains, brake rods, radius rods, torsion rod (when not frozen) spring shackles, controller lock, all controller speeds, foot brakes, controller brakes, motor brushes, steering gear, and grease cups (all grease cups should be turned down once each week) and adjust door bumpers and stops and window catches.

Examine batteries by taking gravity readings of a sufficient number of cells. Locate leaky and dead cells, if any, and determine and report condition of battery as to flushing and general care.

Clean commutator and dress down controller contact fingers and segments.

Line up wheels unless disalignment is due to accident. (In this case the owner will be notified and authority secured for necessary labor and materials, of any.)

Inflate pneumatic tires.

Does Not Include Damaged Parts.

This service does not include replacement of broken, damaged, worn or lost parts, but a report and recommendation of necessary repairs, if any, will be submitted, together with an estimate of the expenses for materials and labor required.

It is specifically agreed that when notice of the necessity of replacement of broken, damaged, worn or lost parts shall be furnished to the owner, that thereafter the service hereinabove provided shall not be rendered with respect to such broken, damaged, worn or lost parts, and that by reason of such inspection and service, the Company does not assume to make any warranty other than the written warranty, if any, made at the time of and as an incident to the original sale of such car to the owner.

It is specifically agreed that this service shall be rendered by the Company only upon the date or dates agreed upon from time to time, and such date shall be fixed as nearly as practicable upon the same date of each successive

month, but the Company shall give the owner notice three days' prior to the date of such inspection and service.

The car must be delivered by the owner to the Company's place of business upon the date appointed, and permitted to remain with the Company a sufficient length of time to permit the rendition of such service, and then called for by the owner.

The Company will, however, upon request of owner, call for and deliver the car, for which the owner agrees to pay 75 cents in each direction, and the owner agrees, in each case when he requests such service that the employe of the Company becomes the agent of the owner and that the Company shall be absolved from all liability arising while the car is in the possession of such employe, at the request of and as the agent of the owner.

The owner agrees to pay to the Company, upon rendition of invoice, immediately following inspection service and report, monthly, the sum of..... Dollars. If for any reason the owner fails to bring the car to the Company's place of business for service on the regularly appointed day, and a lapse of more than five weeks occurs between service dates, the charge for the first service following such lapse shall be..... Dollars.

It is mutually agreed that this service contract shall be and remain in full force and effect until canceled by either party by the giving of written notice to the other. The sale and transfer of said car by the owner shall, upon notice to the Company, constitute a cancellation of this agreement, but the new owner shall be entitled, upon application, to be substituted as a party of this agreement.

In Witness whereof the parties hereto have caused these presents to be properly executed at....., the day and year first above written.

(Seal).....
Owner's address.....
By.....

The Service Is Definite.

Emphasizing the principle of service and the fact that it must be paid for, Mr. Whipple declares service is definite, and costs money. It is not like water—it does not flow from the ground without cost, but costs somebody in proportion to its value, and it does not make any difference whether an automobile

FIRST AID TO INJURED AUTOS

Welding, Cutting, Carbon Burning

—all in one safe, efficient and economical outfit. WELDS broken parts, cracked cylinders, crank shafts, transmission cases, frames, axles, and everything in metal quickly and permanently. CUTS all kinds of steel and wrought iron. DE-CARBONIZES—quickly and effectively removes all traces of carbon from gas engine cylinders. Pays for itself in a remarkably short time.

Every garage should be equipped to handle

IMPERIAL WELDING CUTTING EQUIPMENT
OXY-ACETYLENE PROCESS

profitable repair work this season. A relatively small investment in one of our outfits will give you exceedingly large returns and at the same time gives you an equipment that is unequalled in safety, economy and efficiency.

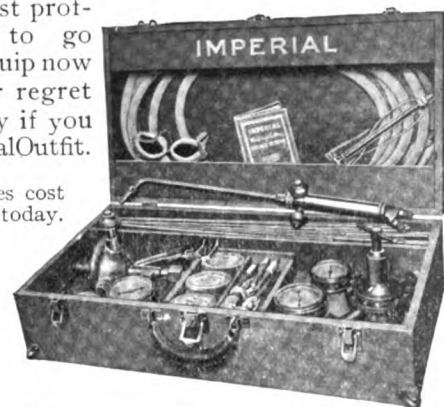
Practical mechanics grasp the operation of the process quickly, and with a little practice soon become efficient welders. Do not permit the most profitable work to go elsewhere—equip now you will never regret it—particularly if you select an Imperial Outfit.

FREE BOOK. Our new illustrated catalog shows work actually done, gives cost of operation and other valuable data. Write for your copy today.

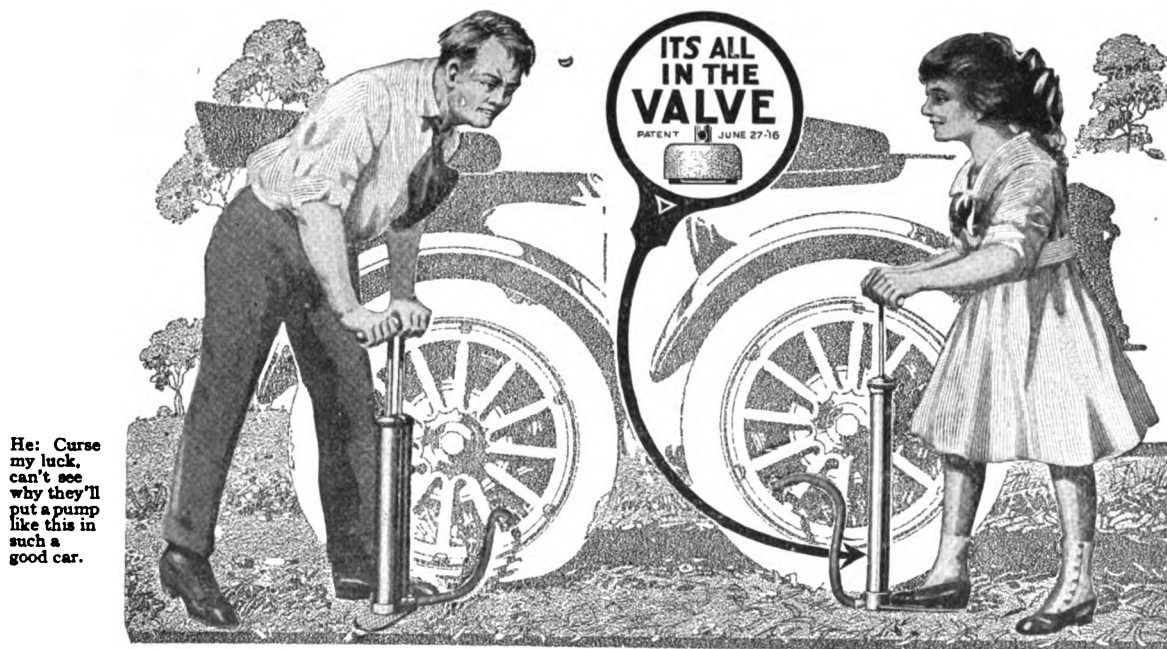
Imperial Brass Mfg. Company

529 South Racine Avenue

CHICAGO, ILL.



DID IT EVER OCCUR TO YOU?



JOBBERs! DEALERs! USERs! More ROSE PUMPS actually purchased by dissatisfied users of out-of-date pumps last year than any other pump in existence. **There Is a Reason. Find Out Yourself. Write for a Sample.**

J. H. HANEY & COMPANY

HASTINGS, NEBRASKA

Manufacturers Rose Pumps, Grease Guns and Fan Belts

owner purchases it in advance at the time of buying the automobile, or whether he purchases it from the manufacturer or dealer, as he may require it; it actually costs money; it is not free. The law of compensation prohibits the policy of "something for nothing."

Webster's definition of service, briefly, indicates that it is labor, assistance, or kindness to another, while the automobile manufacturer's salesman's definition of service, has in many cases been understood or implied to mean everything that a prospective purchaser might be able to imagine—and on the other hand the average automobile owner's interpretation of service has demanded everything that could be obtained for nothing, and whether the owner has been successful in obtaining much, little, or nothing for nothing, he has usually appreciated it as nothing.

Service is the basis of maintaining confidence, "satisfying" service for a reasonable compensation, establishes and maintains a good will between owner and dealer, and it is upon this principle that public confidence, an essential of merchandise success, must be developed. A reputation for fair and honest dealing, or rendering satisfactory service and exacting fair compensation for it, means much for additional patronage and the continual increase of volume of business, which, of course, is the ambition of every far-seeing merchant. So long as the old idea of "something for nothing" persists in business management, just so far may its disintegrating influence be traced in failure.

Pay-Up-Days

The garagemen of Blue Grass, Iowa, have started something. Unless a better plan is suggested, it will be well for the brethren to bear it in mind and use it in future.

In brief the plan was a "Pay-Up-Days" suggestion for January 1, 2 and 3. It bore decided fruit, especially in collections being made more easy before the close of the year—in anticipation of "Pay-Up-Days."

Local conditions will cause a change of wording in other places, but the central idea of "Pay-Up-Days" can be retained. The Blue Grass debtors received the following letter:

"You are about to close one of the most prosperous years that you have ever had; with the price of farm products much higher than they have been for many years, and owing to the great European conflict, the coming year promises to be still greater.

"In order to keep the great wheel of prosperity moving, we must keep money in circulation, which naturally does the most to keep the price down on commodities that you must buy.

"We are very anxious to close our

books for the fiscal year and start out with a clean slate. In order to do it, we must have all our open accounts paid in full, consequently we have set January 1, 2 and 3 as PAY-UP-DAYS and ask YOU very kindly to help make these days a success."

Garageman's Creed.

Editor's Note—Fardowner saw this first, but it should be in the scrap-book of all our subscribers.

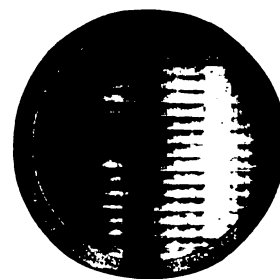
1. My business is a part of the world's greatest and newest industry—THE AUTOMOBILE. By nature of its characteristics I come in contact with men who lead in all lines of human endeavor, therefore I will strive to keep my business above criticism.
2. I will avoid poor and careless bookkeeping methods that result in selling service and merchandise at a loss.
3. I will avoid over-stocking with unsalable goods and avoid poor merchandising methods.
4. I will try to avoid losses from depreciation of merchandise due to improper attention and will strive for frequent turnover of stock.
5. I will endeavor to keep up collections and avoid losses through the extension of credit where not justifiable.
6. I will endeavor to discount all bills when due.
7. I will discipline my employees to render courteous, painstaking and efficient service.
8. I will keep my business clean and sanitary in keeping with the dignity of this industry.
9. I will carry sufficient protection against loss from fire and accident.
10. I will strive to advance the sale of accessories and supplies, using honest and ethical merchandising methods and to patronize my home jobber whenever possible, as so doing is an economic factor in building up my town, community and state.

Legalite Lenses.

Legalite lenses, made by Legalite Corporation, Boston, Mass., have passed a rigid test, made by the Massachusetts Auto Club. Twenty-six headlight lenses entered the test and the club conferred the high-

est honor on Legalite. The verdict was that Legalite was the best lens in the whole twenty-six.

The discovery of the principle involved in the lens was accidental. A misplaced windshield and a passing car with a headlight lens set the driver to thinking and Legalite was the outcome. In brief, it throws a beam of light which thoroughly illuminates the road from 250 to 500 feet away, the beam not going over forty-two inches high and the light being so deflected that one can look directly at the headlight from in front without being dazzled in the least. With a complete elimination of the glare, it also was found there was 26 per cent more light than from a clear lens.



Legalite conforms to all legal requirements and has been endorsed by such cities as Kansas City, Omaha, Washington, Philadelphia, Denver, Albany and Toronto. Also by many state departments on motor vehicles and by automobile clubs.

A feature of Legalite is the perfect view of the road it gives to the driver, the irregularities not being exaggerated as is the case with glaring lights.

Prices range from \$2.75 to \$4.50 per pair, with 25 cents added west of the Rockies. Additional information will be given by the Legalite Corporation, Boston, Mass.

Department Store Fleet of Redden Trucks.

Department stores have awakened to the fact that motor truck delivery service is the most economical. Firms which have been experimenting for years are now abandoning all other forms of delivery and are installing fleets of trucks; either built to order or formed by means of truck units.

The only question regarding the economy of truck delivery is with the short haul and frequent stops. For such deliveries, many firms retain horse-drawn vehicles for various reasons; chief of which is lack of positive cost figures. These figures more and more favor the truck.

Trucks made by the Redden Motor Truck Company have been installed by the Simpson Company, one of the largest department stores in Canada. This firm has adopted trucks to the exclusion of horse-drawn vehicles on all deliveries and after a close set of figuring which showed a decided saving in their adoption.

Sell The Spring You Would Use On Your Own Car

Put yourself in the customer's place. — That will make more business for you, and eventually, for us.



THERE'S A HARVEY JOBBER NEAR YOU
Our new catalogue giving Complete measurements
of over 900 Styles of Springs is yours on request

HARVEY SPRING & FORGING CO.

922-17th Street

RACINE, WIS.



**ADELITE
MOTOR
CARBON
REMOVER**

Thousands of Motorists Are Preparing for Summer

NOW — with the first touch of spring—motorists by the thousands are putting their cars in fighting trim for spring and summer driving. And—*right now*—is the time to cash in on the sale of Ad-El-Ite Motor Carbon Remover. It cleans out every speck of harmful carbon in a few moments. *No lay up.* It stops "knocks" and "kicks," increases power and speed and is *guaranteed harmless to metals.* It's the kind of product you like to sell—makes satisfied customers and brings them back again and again, besides giving you a generous profit in itself. Order now from your jobber or from us.

SPECIAL

Enough to thoroughly clean two or more cars sent prepaid anywhere in the U. S. for \$1.25.

Send for New Book—FREE

"Auto Troubles Cured"—most helpful book of its kind ever printed. Sent free upon request.

Dept. A-3

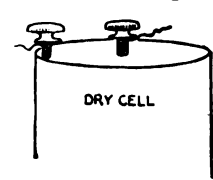
ADAMS & ELTING CO.

716-726 Washington Blvd., Chicago
69-73 Washington Ave., Brooklyn

Soldering Kinks for Repairmen

By the Use of a Material Known as Nokorode Effective Soldering Is Done—
Some Hints of Value to Auto Repairers

To Solder Negative Pole on Dry Cell.



Glen Metcalf, Blandinsville, Ill., has a good idea for dry cell work, as follows:

"Often the negative binding post on a dry cell gets loose and drops off. Don't throw it away, but do as follows: Pull cardboard cover off, clean zinc shell of battery where terminal belongs, dip terminal in muriatic acid, place on edge of battery, apply a little Nokorode and solder."

* * *

Cable Splicing.

It is necessary, or is the custom, with cable splicers to use soldering flux to solder the wires and tallow on the sheath to make the wiped joint, according to Harry Metcalf. He has found Nokorode superior to tallow for lead wiping and uses same altogether. This obviates carrying two kinds of flux for one job, which will be appreciated by one who has much aerial work. It also saves time.

* * *

For Soldering Small Pieces at Both Ends.

L. C. Wesleder is a user and admirer of Nokorode. In soldering small pieces at both ends one often has trouble with the first end unsoldering, in which case he takes a strip of cloth (preferably wool), dampens it and wraps it around the end first soldered and has little trouble with the heat melting the solder*off.

* * *

To Solder Cable and Parts Set in Rubber Without Melting the Rubber.

To solder cables to posts set in hard rubber connectors in automobile electric lighting work, without melting the rubber, Herbert W. Kimball, Haverhill, Mass., holds the rubber plug by wrapping it in a wet cloth, uses Nokorode paste and solders with a small iron.

* * *

Soldering Badly Corroded Wires.

It is a proposition to solder two stranded conductors together or into a lug when they are composed of from 50 to 150 small wires such as lamp leads for moving picture machines, etc. Some are always badly corroded and it is next to impossible to scrape them to make a job of it. After removing the insulation put the wires in a solution of nitric acid 25 per cent, water 75 per cent, for about a minute. This may be in a small bottle to be convenient. Then thoroughly wash wires with water and dry. They are now very clean and

bright and can be easily soldered with Nokorode and solder, preferably using an iron or gas jet.

* * *

A Time Saver to Increase Speed in Bench Work.

To solder small parts quickly and save the time required to pick up iron or solder, make a stand from two pieces of board nailed at right angles, fasten one end to the bench and in the upright, at a convenient height, make a hole of sufficient size to hold the solder, then by holding the parts to be soldered in the left hand and the soldering iron in the right, the upright will act as an assistant and always hold the solder just where it is most convenient.

* * *

Better Than Electric Soldering.

W. A. Hines, in the Electrical Review and Western Electrician, gives out this practical suggestion to solderers:

"I have tried a number of different kinds of heating devices while soldering armature coils to commutator bars and also when putting band wires on, and have failed to find anything that answers the purpose so well as the one I am now using.

"I took a heating unit of an old discarded tailor's iron, and after doing some repair work on the unit itself, I cut several thicknesses of heavy asbestos board into just the shape of the top of the unit. Putting plenty of shellac between these, I placed them on top of the unit to protect the hand from excessive heat. In making a handle I raised it about twice as far away from the iron as such handles usually are.

"This is proving to be the most useful tool I have ever found for sweating-in armature leads, and soldering on band wires."

* * *

An Easy Way to Apply Solder Smoothly.

G. A. Buzzell writes: "A good way to tin the surface of a piece of metal is to first clean it, apply a little Nokorode and attach to it in several places small lots of solder, then use a stick or brush that has been dipped into the flux and spread the solder by brushing it while hot."

* * *

A New Kind of Soldering Iron.

Henri Piccard, of New York City, has developed a new kind of tool for solderers. He writes:

"I have found the soldering copper illustrated here to have several advantages over the regular straight tool, especially when wire joints near a ceiling have to be soldered. By the use of a tool of the kind

illustrated I have saved myself from many a burn which would have been inflicted by falling pieces of hot solder if a straight soldering iron had been employed.

"In making this tool I took an ordinary straight iron and removed the copper portion from the stem. I then drilled a hole through the copper as indicated, making the hole slightly smaller than the rod to be inserted. The rod was then filed to a slight taper, driven through the hole and riveted on the end. Then I filed a groove



crosswise in the copper near pointed portion, the purpose of this groove being to hold the melted solder, which otherwise would have a tendency to roll off as fast as applied.

"In using this soldering iron the groove is filled with solder and held parallel with the wires to be soldered. Thus the hands are kept well out of the way of any metal that may fall.

"This iron can be used rather conveniently as a hammer also when a better hammer is not at hand."

Note—Nokorode is an M. W. Dunton Co. (Providence, R. I.) product and procurable of any representative accessory jobber.

A Radiator Cure That Cures.

It is one of the axioms of M. W. Dunton Co., Providence, R. I., that a trial customer is a permanent customer on its Black Diamond Radiator Cure.

This radiator cure has become a regular article in a good share of the accessory stocks of the country and the Dunton company will not be satisfied until it has become a standard in every accessory stock.

Dealers who carry Black Diamond are practically certain of a sale every time a leaky radiator enters their garage doors. The leak must be stopped and the suggestion of an application of Black Diamond is readily accepted.

There is a decided profit in handling Black Diamond Radiator Cure, further particulars on which will be sent on application to the manufacturers.

* * *

Testing batteries will be an important part of the garageman and repair man's function during the coming winter months and Julius Andrae & Sons, Milwaukee, have developed a "Testmeter," the function of which is to show the condition of each cell of the battery. It sells at \$8.00.

Grinding and resurfacing valves by special tools is one way of increasing shop profits and speeding up deliveries of repair jobs, according to Albertson & Co., Sioux City, Ia., who make a tool and cutter which sells at \$6.00, with extra cutters at 75 cents each.

Milwaukee Curb Pumps

Power Or Hand Operated



Master Electric

From among the wide range of outfits which the Milwaukee line offers you, you can surely find one to exactly fit your needs.

Milwaukee gasoline curb pumps have earned an enviable reputation as business-getters. Speedy service and absolutely accurate measurement are the features that determine whether the motorists will patronize you or a competitor; speed and accuracy are the features which stand foremost in Milwaukee Outfits.

If you have an old, obsolete outfit, it will pay you to install a fine, trade-attracting Milwaukee Pump.

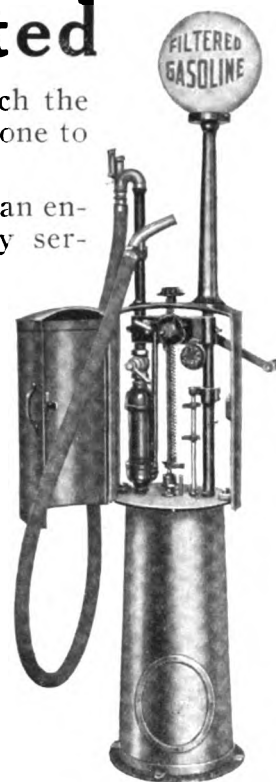
Write today for catalog and interesting literature.

Milwaukee Tank Works

Milwaukee, Wisconsin

Manufacturers of 30 types of gasoline and oil pumps and storage outfits.

Prompt shipments from warehouses in New York, New Orleans, Milwaukee and San Francisco.



Type 37

MONOGRAM

OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

Monogram Users are Quality Choosers.

NEW YORK LUBRICATING OIL CO.

NEW YORK CITY

Branches in Principal Cities

There is Big Money for You in Battery Charging

with HB 500 Watt Equipment. It guarantees Quick Charging and that means Big Profits

The demand for battery charging will be bigger than ever this year. Decreased production of pleasure cars means more old cars kept in service, more batteries that must be recharged, and more business for the man in the garage. The time to get ready for *big business* this spring is *now*.

HB 500-Watt Battery Chargers are earning from \$40 to \$60 extra profit each month for hundreds of users. Recharges 1 to 7 batteries at a time with current cost of 12c to 15c per battery. Autoists pay 75c to \$1.50. At least \$4.50 profit each capacity run. City current or engine operates. No electrical or mechanical experience necessary. *Big profits quickly made.*

\$15 Puts This Money-Maker in Your Garage

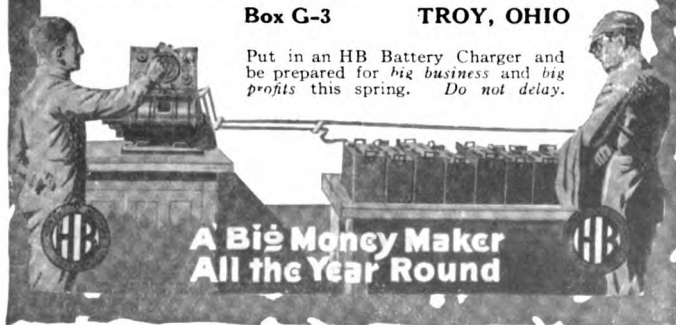
Balance in 8 monthly payments of \$20 each, which earnings should easily more than pay. Tear out this ad and send it with name for full particulars, or send initial payment of \$15 with trial order. *No risk. Absolute money-back guarantee.*

HOBART BROTHERS COMPANY

Box G-3

TROY, OHIO

Put in an HB Battery Charger and be prepared for *big business* and *big profits* this spring. *Do not delay.*

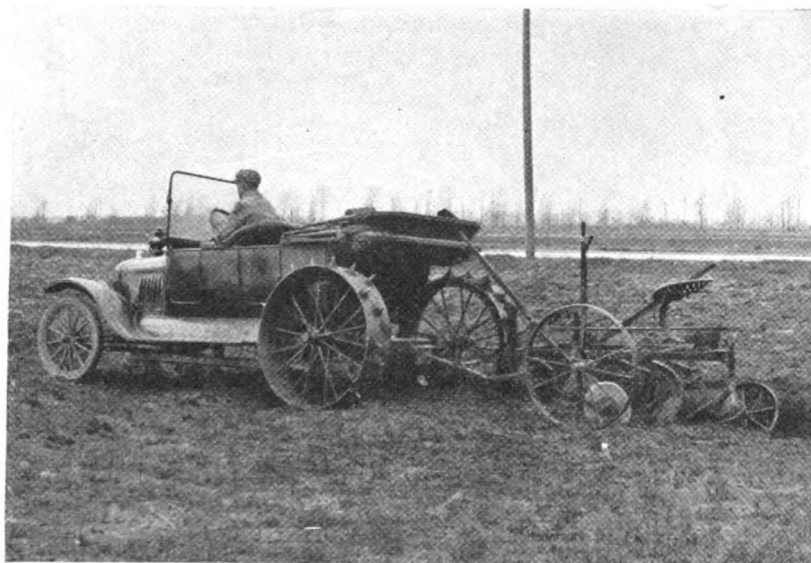


A Big Money Maker All the Year Round

WHAT IS THE FORM-A-TRACTOR ATTACHMENT?

The Smith Form-a-Tractor is a device which converts a Ford roadster or touring car into a powerful tractor capable of pulling two 12-inch or 14-inch plow bottoms or for doing any other work which a standard type tractor of equal horsepower can do. This is accomplished without changing the Ford car in any way except by the substitution of a radiator with more cooling surface than the regular Ford

radiator, and the installation of a force feed oiling device. Both radiator and oiler become permanent parts of the Ford car equipment. The Form-a-Tractor attachment is complete in itself and can be attached to or removed from the car in a few minutes. No portion of the Form-a-Tractor is permanently attached to the car, and the latter, as soon as the attachment is removed and the regular wheels put back into place, is once more the passenger car it was originally.



Form-a-Tractor at Work.

Shaler Vulcanizer Display.

C. A. Shaler Company, Waupun, Wis., is marketing its Five Minute Vulcanizer in a novel carton and counter display.



The cover of the stand provides for a real vulcanizer to be fastened on a section of inner tube; showing both the method of operation and a completed repair. The graphic method of telling the story operates to make the vulcanizer move fast in an accessory stock.

The Oakland publicity department has gathered statistics to combat the arguments of folk who are not motorists and believe they should not be asked to share in road improvement costs. It is found that only about 3 per cent of the cars that traverse American highways should be listed in the tourist class. Of the rest, 87 per cent, according to the figures, are devoted to social and commercial purposes between neighboring towns.

GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel will put them back on the job.**

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the McDaniel plant they

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40

are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the **SPECIAL McDANIEL DOUBLE TREAD PROCESS.** Your old tires are now made into one good tire ready to give you thousands of miles extra service.

TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,

804 Commercial Ave.,

Cairo, Ill.

Fill Up Our Soldiers' Pipes

America's fighting men need tobacco to make trench life a little more comfortable. Here's a chance to treat the boys at the front.

"Our Boys In France Tobacco Fund" has been organized to furnish "smokes" for the American soldiers and sailors in active service.

All labor and administrative expenses are contributed so that every cent you give goes to pay for tobacco, which is purchased in large quantities at a low price.

One dollar buys four packages of tobacco and sends them to France. Each package, costing twenty-five cents, has a retail value of forty-five cents and keeps a man in "smokes" for a week. Every dollar sent to "Our Boys In France Tobacco Fund" buys a bundle of tobacco that would cost \$1.80 at your cigar store.

In every package is a post card addressed to a contributor to the tobacco fund. In accepting the package, the soldier or sailor agrees to send on the card a message to his benefactor in the United States. According to the plan, every person who gives a quarter gets his receipt from a fighting man in France.

The work of this fund is approved by the Secretary of War and the Secretary of the Navy.

Send as many dollars as you can spare. Write your name and address clearly.

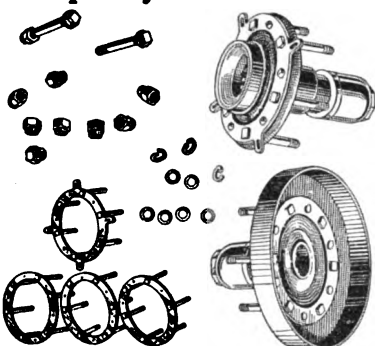
"Our Boys In France Tobacco Fund"

25 West 44th Street, New York City

On Their Way in Four Minutes



Simplicity Demountable Wheel Outfits for Fords



Eliminate the delays and "dirty work" resulting from tire troubles or broken wheels. With a Simplicity Outfit any motorist can change wheels in four minutes or less, without soiling hands or clothes.

Complete Simplicity Outfit, \$15.00 (Installation extra).

DEALERS: Here is a winner for you. Write today for particulars.

Simplicity Wheel Co.
Grand Rapids, Mich.

Any barrel is now a portable Self-Measuring Tank with the BOE Automatic OIL PUMP



No funnels. No waste. Only clean oil cleanly delivered. Fits any style 25 to 60 gallon steel or wood barrel. Measuring graduated to $\frac{1}{4}$ pint. Will pass state inspection.

Literature and prices on request.

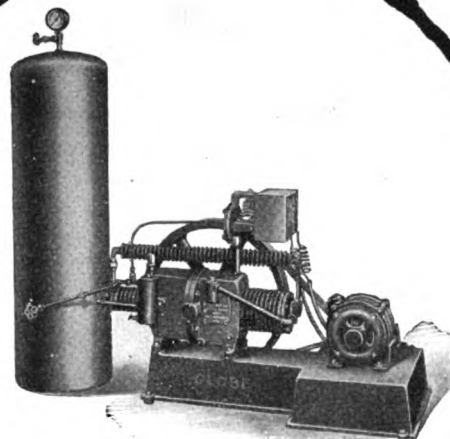
H. M. BOE CO.

2416 University Ave., S. E.
MINNEAPOLIS, MINN.

GLOBE

QUALITY

means CLEAN AIR SERVICE



The installation of air equipment does not mean simply air compressors. You must protect yours and your customers' interests by supplying "clean air" free from oil.

GLOBE AIR COMPRESSORS are so constructed that it is impossible for the slightest bit of oil to reach the tire.

GLOBE TWO STAGE AIR COMPRESSORS represent the most economical service for garagemen.

GLOBE AIR COMPRESSORS give constant and efficient service. They last longer and are, therefore, cheaper.

The GLOBE UNLOADER is an exclusive feature that permits the starting of compressor without load. This device avoids the danger of burning your motor or the throwing or burning of belts. It also automatically drains the oil tap every time the compressor is stopped.

ALL TYPES OF AIR COMPRESSORS

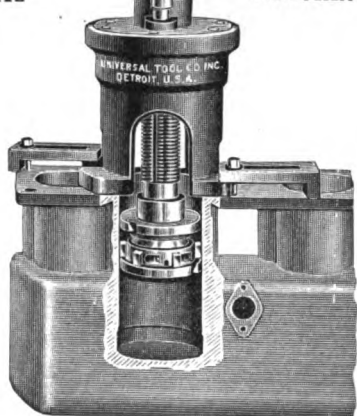
Write us your air compressor requirements and let us recommend an economical and suitable outfit for your purpose.

Write us today for free illustrated literature.

GLOBE MANUFACTURING CO.
BATTLE CREEK MICHIGAN

THE IMPROVED UNIVERSAL

CYLINDER REBORING TOOL



Cylinder Reboring is expert work, which builds up a trade of satisfied customers, and in many cases the only remedy for lost power.

THE IMPROVED UNIVERSAL CYLINDER REBORING TOOL is simple to operate and bores perfectly round and smooth. Adjustable from 2 1/2" to 5 1/16".

You can make liberal profits if you are equipped for this work.

For Sale by Your Jobber Write for Catalog No. 10

THE UNIVERSAL TOOL CO., INC.
DETROIT, MICH. U. S. A.

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

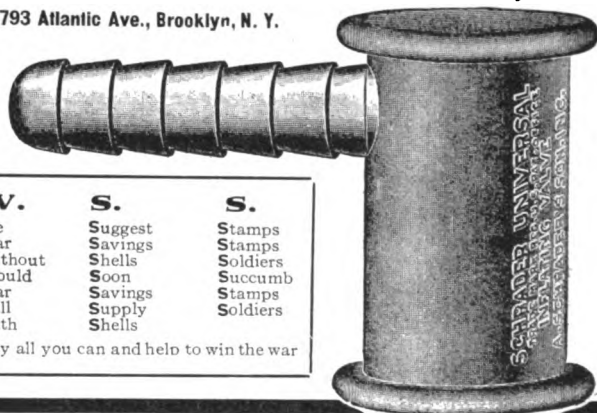
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from 1/4 to 3/4 inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.

We
War
Without
Would
War
Will
With

S.

Suggest
Savings
Shells
Soon
Savings
Supply
Shells

S.

Stamps
Stamps
Soldiers
Succumb
Stamps
Soldiers

Buy all you can and help to win the war



Smooth as the flight of the birds



going North for the Summer is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



WILLARD SUPER HEATER

A great
saving
for the car
owner.

Big Profits
for You

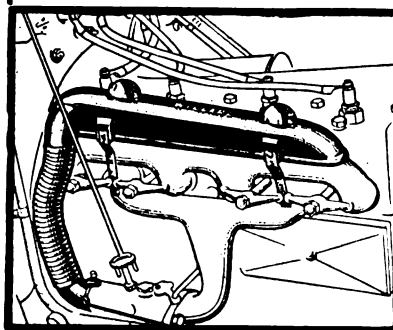
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



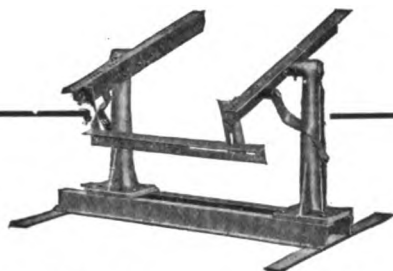
For Soldering Gasoline Tanks Use KESTER CRYSTAL CORE WIRE SOLDER

and for many other automobile soldering jobs. Get in the habit of using it. Carry a good supply of it. Then when you do have an automobile job which requires soldering you will be prepared for good results with saving of time and labor. Sold in one-pound coils in cartons, and on one, five and ten pound spools.

Order From Your Jobber



CHICAGO SOLDER CO.
CHICAGO, ILL.
U.S.A.



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hilite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

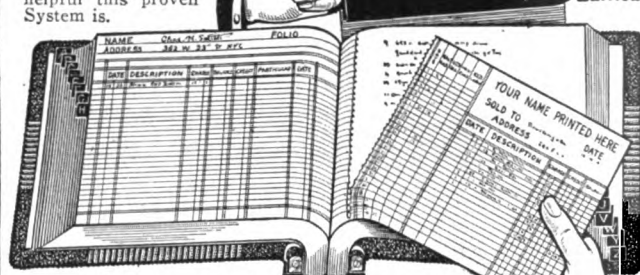
Save Money Every Day with the HARTON LOOSE LEAF GARAGE PLAN



GARAGE OWNERS You are losing money every day if you have not installed the HARTON LOOSE LEAF GARAGE SYSTEM. The HARTON SYSTEM is an automatic book-keeper that cannot make mistakes and requires no salary.

The HARTON SYSTEM turns losses into profits. Garage keepers write us telling how accurate and helpful this proven System is.

A Dollar Saved is a Dollar Earned



This Page is the Customer's Bill the one underneath is your copy

A FEW REASONS WHY

1—When you make an entry a bill and charge are made at the same time. 2—Simplified method for recording and posting all items. 3—Avoids the necessity of posting each item. 4—Requires the minimum amount of labor. 5—Statements ready at end of month for immediate mailing.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

Send for Descriptive Folder and Full Particulars

THOMAS J. HARTON & CO., Inc.

Loose Leaf Specialists

212-X Church St., NEW YORK

AMPECO PRODUCTS

Sell readily because their superiority is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

**American
Machine
Products
Co.**

Marshalltown,
Iowa



Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.

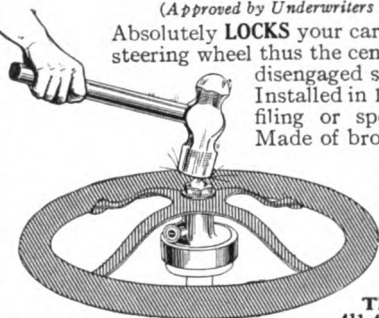


Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely **LOCKS** your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.



DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.

GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company

1002 Washington Boulevard
Chicago, Illinois



The garagemen's best friend—

If you have a supply of NOKORODE you are always ready for any tough automobile job.

NOKORODE

does the work better and quicker, and in many cases where it would be difficult to use other soldering fluxes.

Just a drop or a mite of NOKORODE oftentimes is all that is necessary to make a permanently satisfactory soldering job.

Use NOKORODE for any automobile repair work and you will never have any customer complaints.

Testing samples on request.

THE M. W. DUNTON CO.
Providence, R. I., U. S. A.

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

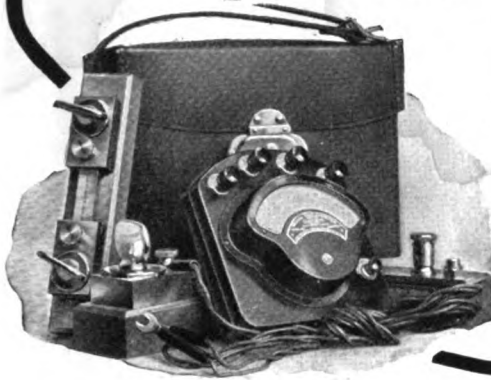
Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers

Electrical Repairs Bring the Big Profits!



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

Weston GARAGE TESTING INSTRUMENT

Model 280

Is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to promptly and accurately determine the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*

Weston Electrical Instrument Co., 30 Weston Ave., Newark, N. J.

23 Branch Offices in the Larger Cities

The Garage with ROMORT EQUIPMENT

Gives its patrons better service—its proprietor bigger profits.



Style A
List Price \$3.00

usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to hard, rough usage. Air is released only when the Valve is pressed on to the tire. Equipped with the famous Romort Pump Connection Rubber. Style B, without springs, \$1.00.

ROMORT AUTOMATIC AIR VALVES

The Style A Valve is a guaranteed device that has no equal for free air stations. Will withstand any rough or hard

All Jobbers Carry ROMORT Specialties. WRITE FOR LITERATURE.

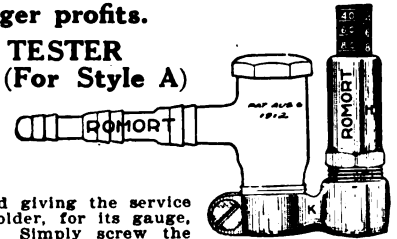
MANUFACTURERS

ROMORT MANUFACTURING COMPANY
OAKFIELD WISCONSIN

ROMORT TIRE TESTER ATTACHMENT (For Style A)

A Garage Necessity
List Price, \$1.50

A device for attaching your gauge to either Style A or Style B Romort Air Valves, and giving the service station a permanent holder, for its gauge, ready for instant use. Simply screw the gauge onto the holder and you have a tire tester and tire inflator combined in one. Every garage with free air should be equipped with the Romort Tire Tester Attachment.



SALES DEPARTMENT

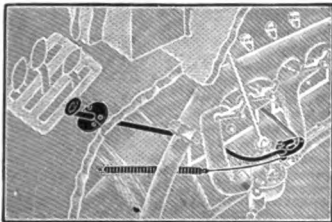
THE ZINKE COMPANY

1323 South Michigan Ave.

CHICAGO, U. S. A

Two "Sure Fire" Sellers for the Trade

EWALD FOOT ACCELERATOR



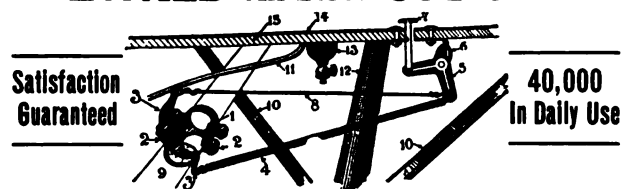
gets the Ford under full speed almost instantly. It does away with the vexatious delays when starting and leaves the driver's hands free to operate the steering wheel, horn or brakes.

It increases the mileage per gallon by not racing the engine and soon pays for itself.

Ford owners everywhere are ready customers.

DEALERS: Write for literature on Ewald specialties and our liberal trade offer.

EWALD 2-Inch All-Steel CUT-OUT



Satisfaction
Guaranteed

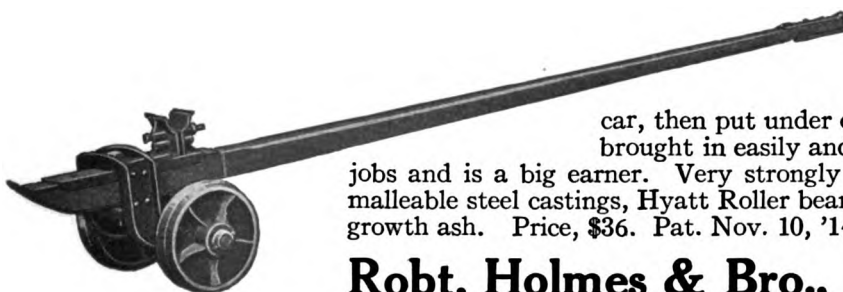
40,000
In Daily Use

Will make any car talk like a racer.
Just look at our low prices!

2-inch Cut-out for Fords.....\$0.30 List
2-inch Cut-out for Dodge, Studebaker, Hupmobile,
Maxwell, Buick and Chevrolet.....\$1.25 List

EWALD NOVELTY WORKS, Oakfield, Wis.

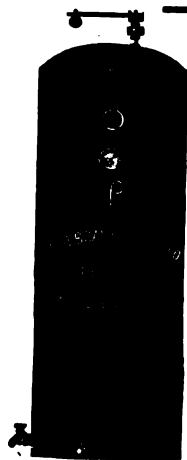
Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$36. Pat. Nov. 10, '14. Discounts to dealers and garages.

Robt. Holmes & Bro., - Danville, Ill.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



GARAGE AIR TANKS

Scaife Copper-Braced Tanks will hold air indefinitely without loss of pressure.

Copper-Braced Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.

Elgin Six

"The Car of the Hour"

5-Passenger Touring **\$1,095** 4-Passenger Roadster

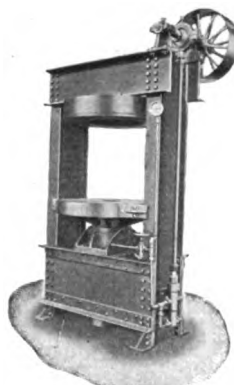
Subject to Change Without Notice

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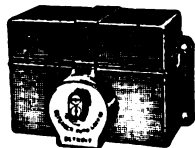


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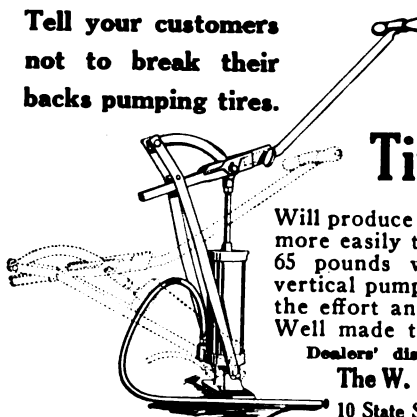
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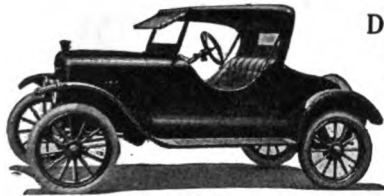
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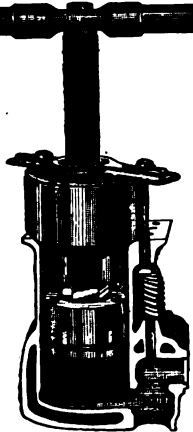
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Index to Advertisements

A		I	
Accurate System & Manifold- ing Co.	61	Imperial Brass Mfg. Co.	45
Acme Demountable Wheel Co. —		Inland Machine Works.	
Adams & Elting.	47	.....Inside Back Cover	
Advance Automobile Access- ories Corp.	62	Iowa Novelty & Brass Wks.	58
American Bolt & Screw Case Co.	57	J	
American Machine Products Co.	53	Jenkins Vulcan Spring Co.	57
American Oil Pump & Tank Co., The.	6	Johnson Gas Appliance Co.	—
American Technical Society.	—	K	
Aske Automatic Voltage Regu- lator Co.	—	Kamlee Co., The.	59
Atlas Auto Supply Co.	59	Kennedy Car Liner & Bag Co.	59
Auto Cape Top Co.	58	Kerosene Burning Carburetor Co.	—
Auto Engine Works.	58	Keys Piston Ring Co.	56
Auto Salvage Co.	58	L	
Auto Spring Repair Co.	59	Lawrence & Co., L.	58
Automatic Time Stamp Co., The.	—	Lenthe, L. E.	58
Auto Wrecking Co.	58	Lourie Mfg. Co.	56
B		M	
Baird Equipment Co.	57	McDaniel Rubber Co., Leo.	50
Bearings Service Co.	59	Marvel Carburetor Co.	8
Berno Co., A. J.	59	Marvel Machinery Co.	—
Boe Co., H. M.	51	Martin Rocking Fifth Wheel Co.	—
Breco Electric Co.	43	Master Body Co.	59
Brunner Mfg. Co.	7	Miami Trailer Co.	4
Burd High Compression Ring Co.	—	Milwaukee Tank Works.	49
Butler Mfg. Co.	58	N	
C		National Cash Register Co.	41
Cassidy Co., Edward A.	—	National Rubber Filler Co.	6
.....Inside Front Cover		National Wire Wheel Works.	57
Catelain, Andre G.	58	New York Lubricating Oil Co.	49
Chicago Baling Press Co.	57	Norma Company of America, The.	9
Chicago Solder Co.	53	O	
Commonwealth Edison Co.	5	Olympian-Motors Co.	59
Consolidated Motors Co.	—	P	
D		Pan Motor Co.	—
D & D Co.	—	Pondelock Bros.	54
Defender Auto Lock Co.	56	Pruyn Ball Bearing Works.	61
Detroit Auto Radiator Co.	58	R	
Detroit Weatherproof Body Co.	57	Regal Motor Car Co.	—
Dunton Co., M. W.	54	Reliance Co.	54
E		Romort Mfg. Co.	55
Electrical Testing Co.	58	Ross-Gould.	—
Elgin Motor Car Corp.	56	S	
Ewald Novelty Works.	55	St. Paul Welding & Mfg. Co.	58
F		Scaife & Sons Co., Wm. B.	56
Federal Sign System (Electric) 5		Schaler Co., C. A. ....Front Cover	
Flexlume Sign Co. ....Back Cover		Schrader's Son, Inc., A.	52
G		Security Auto Lock Co.	—
Ganschow Co., William.	54	Simplicity Wheel Co.	51
Garden City Spring Works.	59	Slocum, Avram & Slocum.	—
Globe Mfg. Co.	51	Standard Electric Lamp Wks.	—
Graham Roller Bearing Co., The.	56	Standard Oil Co. of Indiana.	10
Greb Co., The.	57	Sterling Engine Co.	58
Greer College of Motoring.	58	Storm Mfg. Co.	59
Guarantee Liquid Measure Co. 3		Sunderland Machinery & Sup- ply Co.	58
H		U	
Haney & Co., J. H.	45	United Engine & Mfg. Co.	53
Harton & Co., Inc., Thos. J.	53	Universal Battery Co.	43
Harvey Spring & Forging Co.	47	Universal Industrial Corp.	59
Heinz, J. O., Co.	—	Universal Tool Co.	52
Helser Special Tool Co.	—	V	
Hobart Bros.	49	Vanderpool Vulcanizing Co.	—
Holmes & Bros., Inc., Robert.	55	Visible Gasoline Dispenser Co. 8	
Howell Co., The W. H.	56	W	
Hughes & Co., D. C.	—	Webber & Co., P. H.	52
		Weston Electrical Instrument Co.	55
		Wiggins, J. B., Co.	—
		Willard Co., The.	52
		Wilson, K. R.	57

This Bookkeeping System Saves You One-Half Your Work on Charge Accounts

and it will save you many mistakes, losses and dis-
puted accounts. A large number of successful
Garages, Repair Shops and Accessory Dealers are
now using the

"AKKURATE" Self-Indexing Ledger Statement

One entry does all your bookkeeping, day book,
journal and monthly statements. A final entry at
close of month completes your ledger record.

It's simple, requires no experts, as a matter of
fact, you can be your own bookkeeper with our
system.

The System is Self-Indexing. Get that—S-E-L-F
I-N-D-E-X-I-N-G. You do not have to "hunt and
hunt" for an account.

Send for Free Sample

We have just completed a miniature "AKKURATE" System
that shows in detail the short-cut, efficient and money-sav-
ing plan. Write for a copy and see how it will help you.

(Garage Dept.)

Accurate System & Manifold Co., Inc.
12 Elm Street New York City



**Ford Set of 12
American
Hammered
Piston Rings
\$7.50**

Oversize Set \$8.70

One-Piece, Concentric, Leak Tight, "American"
Rings are *Hammered* to test the individual cast-
ings and give them permanent tension and perfect
compression. Sizes to fit any motor.

"Hammered" Piston Ring Co. of America
1919 Michigan Avenue, Chicago, Ill.

35% Discount with the return of this ad.

Single Row Double Row
**REGROUND
BALL BEARINGS
NEW**

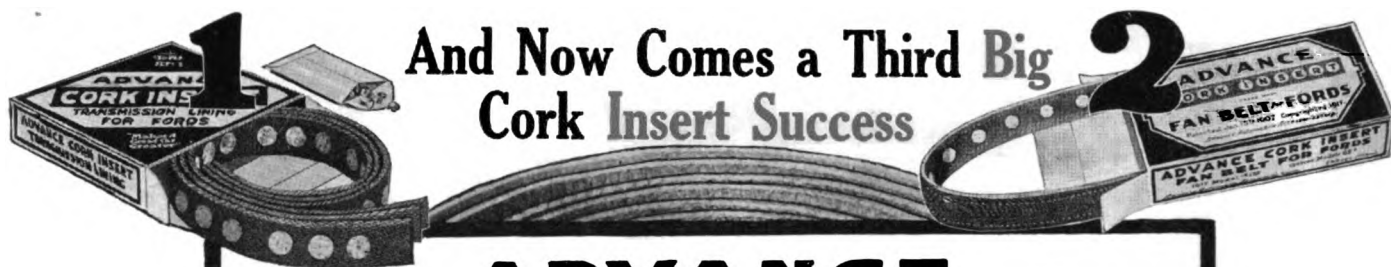
We will duplicate your worn bearings with reground
ones immediately in exchange from stock

**Steel Balls Thrust Bearings
Straight or Taper Roller Bearings Replaced
With New Ones**

QUALITY PRUYN SERVICE
BALL BEARING WORKS
1919 Michigan Avenue Chicago
Taper Roller Bearings for Ford Front Wheels



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



And Now Comes a Third Big
Cork Insert Success

ADVANCE CORK INSERT BRAKE LINING

No Grab—Slip—Squeak

—most efficient brake lining ever produced
—sizes for all makes of cars

Cork Insert Brake Lining *takes hold* with a smooth, even friction. The braking action is positive and instantaneous. As very slight pressure on the pedal is required, it does not heat up as other lining does. Does not get glazed over or slippery, and then grab and slip and squeak when brought into action. It is not affected by oil or grease and will not swell. It outwears every other lining made and retains its high frictional qualities to the last mile.

Cork Insert Brake Linings have been thoroughly tested with remarkable results. Under severe tests, they have delivered big mileage without showing appreciable signs of wear. They have proved sure, safe, quiet and economical—and the verdict of users is: "We are satisfied that these are the best linings we have ever used."

DEALERS! Cork Insert Brake Linings are handled by the same jobbers who handle Cork Insert Transmission Linings and Fan Belts. Get the benefit of the selling *punch* of the Cork Insert idea. Ask your jobber.

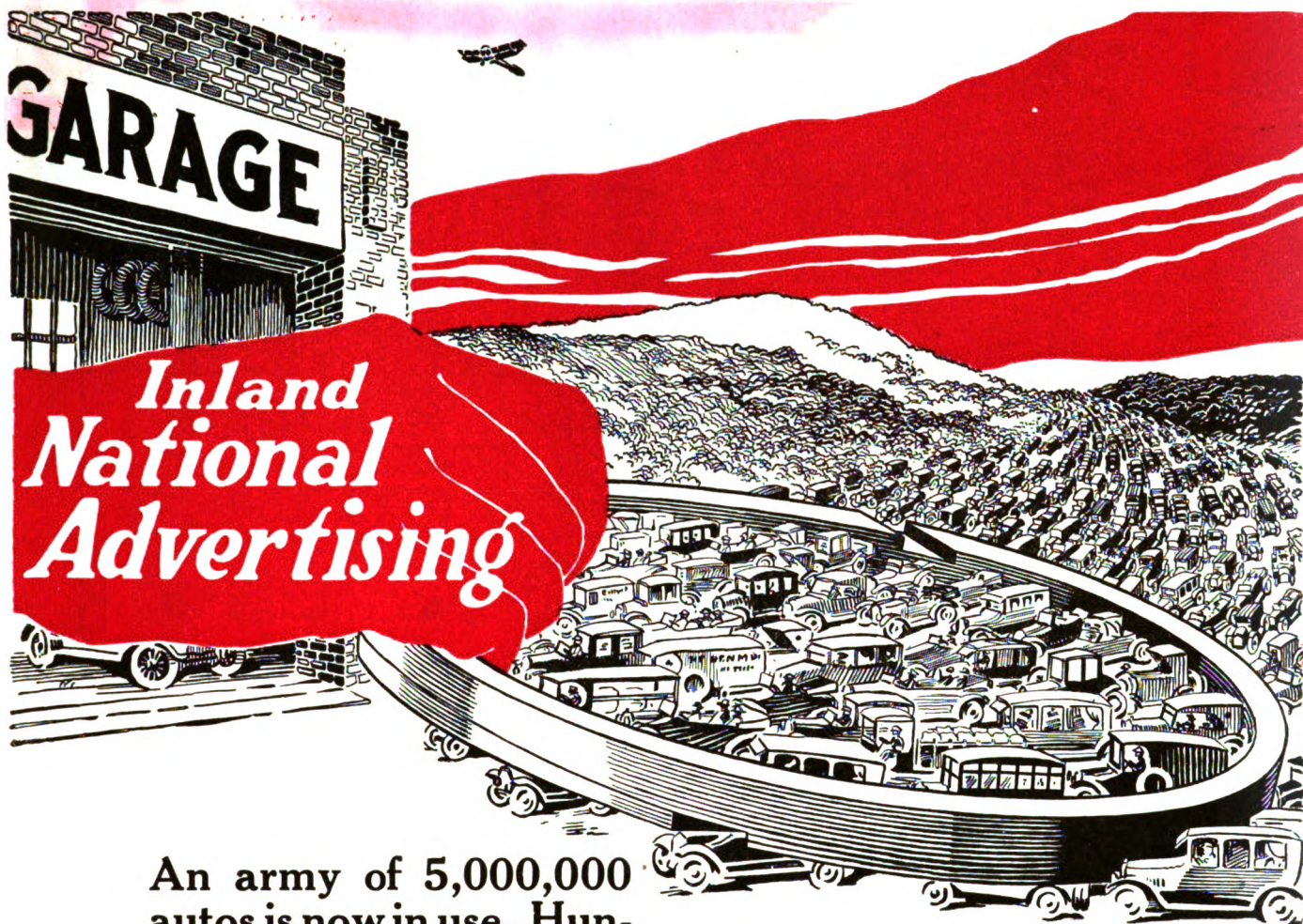
ADVANCE AUTOMOBILE ACCESSORIES CORP.

Dept. C-7, 56 East Randolph Street, Chicago, Illinois

ADVANCE
CORK INSERT
TRANSMISSION LININGS FOR FORDS

Makers also
of

ADVANCE
CORK INSERT
FAN BELT FOR FORDS



An army of 5,000,000 autos is now in use. Hundreds of thousands of them *need* new piston rings. With our big, smashing page and half page ads in

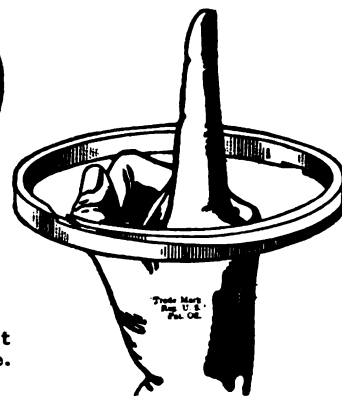
The Saturday Evening Post Literary Digest Collier's

we are making these millions of motorists realize the *necessity* and *economy* of installing gas-tight piston rings—and emphasizing the special advantages of Inlands.

Now it's up to you. A big overhauling business is ready for you—if you'll link up your garage with Inlands and Inland advertising. To help you do this we've prepared *complete material for your local use*, that will *bring* you the overhauling business of your vicinity. We supply this *free*. Thousands of live garage dealers are working with us and reaping the benefit in bigger business. How about you? Write us today.

INLAND

1 PIECE PISTON RING



The Spiral Cut makes it absolutely gas-tight. One-piece construction makes it low-priced. Equal width and thickness makes it strongest and most durable.

Inland Machine Works, 817 Mound Street, St. Louis, U. S. A.



DODGE BROS - PEERLESS
KNOBBY TREAD TIRES
BARGAINS IN USED CARS

PUBLIC SERVICE GARAGE

Why Not Let The Car Makers Buy This Sign For You?

In this interchangeable Flexlume Oplex Sign each letter is a unit—you can pull them out and stick in a new set of letters—it only takes a few minutes.

What does this mean to the automobile sales agent?

It means that he can give up one line of cars and take on another without spoiling the value of his sign—just get letters to make the new name, that's all.

It means he can change the sign as often as he likes in order to advertise the hundred and one things he may wish to push.

It means that with the co-operation of his car makers he can get a splendid sign at very low cost—if you buy the frame, almost any manufacturers will be glad to pay for the letters to make up their own names. Try them and see if they won't.

And when you get one of these signs you get the same distinctive sign value that has made Flexlume Oplex signs known everywhere, the same raised, white letters on a dark background, the same artistic designs, the same splendid daytime effect, the same intense brilliance when the sign is illuminated.

Write today for details, prices and a sketch showing a sign particularly suited to your needs.

Be sure you mention what letters you want interchangeable or illuminated.

Bear in mind that the cost of the sign will depend upon the size and number of illuminated letters used.

FLEXLUME SIGN CO., Buffalo, N. Y.

Please send me free sketch and information in regard to Flexlume Signs.

Signs should read, illuminated.....

.....
Wording not illuminated.....

To read one or two sides?.....

Vertical or horizontal?.....

NAME

ADDRESS

A. G. & A. D.

THE FLEXLUME SIGN CO.

Potomac Ave. and Niagara Street, BUFFALO, N. Y.

Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.

Pacific Coast Distributors: Electrical Products Corporation,
941 West 16th St., Los Angeles, Cal.

AMERICAN GARAGE & AUTO DEALER

Volume 9
Number 4

CHICAGO

APRIL, 1918

\$1.00 Per
Year



SHALER

5 Minute Vulcanizer

THIS + THIS
VULCANIZES
YOU
ANY
5 Minutes

Round Units
for Punctures

Oblong Units for
Cuts and Tears

Mends Tubes in 5 Minutes

Complete (With 12 Patch and Heat Units) \$1.50

The Vulcanizer, 6 Patch and Heat Units of round shape for punctures and 6 of oblong shape for long cuts and tears are included in the outfit. Each unit is complete—ready to use. No gasoline, acid, cement or flame required.

The Patch and Heat unit is placed over the puncture—the vulcanizer clamped in position and a match applied. In 5 minutes you have a perfect, lasting, "feather-edge" repair.

The SHALER 5-Minute Vulcanizer sells itself. You only need to place the display case on your counter or in your window.

The 12 Patch and Heat Units that go with the outfit are soon used up—and the motorist comes back to you for more—at 75c a dozen.

This repeat business pays you a good profit and brings motorists to your place regularly, who will also buy other goods!

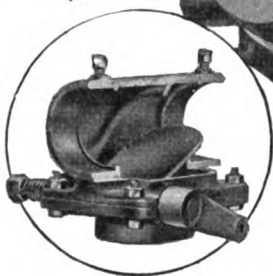
Place Your Order With Your Jobber NOW!

Don't delay! The enormous demand for SHALER 5-Minute Vulcanizers has exceeded our factory capacity to make deliveries. We are building a large 3-story addition to our plant—but to make sure of prompt shipments—place your order with your jobber now—specifying date of shipment desired.

*Catalog describing the complete line of SHALER Vulcanizers
for Motorists and Tire Repair Shops—Sent FREE on request.*

C. A. Shaler Company, 354 Fourth Street, Waupun, Wis.

Sectional view,
showing pat-
ented gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

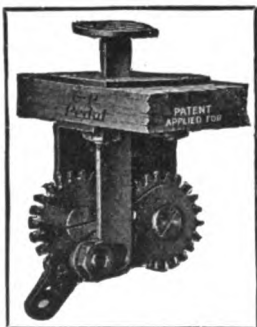
Keep your engine fit—nip trouble in the bud

Don't overlook the little engine troubles. They soon develop into big ones. Know what your engine is doing, and it's easy to keep it right.

Put a G-P Muffler Cut-Out on your car. It accentuates the purr of the engine and warns against power wastage. The G-P calls attention to operating defects that escape the unaided ear. It cuts cost by saving power.

The G-P Muffler Cut-Out is built simple and strong. Gases exhaust fully with no possibility of back-pressure. It literally blows the carbon out of your engine. Carbon cannot accumulate. Made in two parts permitting quick and thorough access to interior. Gives complete cooling relief to the motor. Put one on and know at any time what your engine is doing. It will save gas and increase power.

The G-P Muffler Cut-Out and G-P PEDAL



The G-P Pedal is made entirely of steel, and is strong enough to operate any cut-out spring. The geared compound leverage makes it easy to operate.

Compounding of leverage and geared parts allows installation in minimum space. Its installation requires but one small hole drilled in floor

board. The locking device is on the bottom plate, so the pedal can be fastened to a steel or wood floor board of any thickness without altering its throw.

By releasing one screw the G-P Pedal can be changed to lift or pull in any direction. Operates any cut-out easily.



Sales Department

EDWARD A. CASSIDY CO., INC.,

285 Madison Avenue, New York City

Manufacturers: The G. Piel Co., Inc., Long Island City, N. Y.

You Can Make **\$1000** Profits This Summer

Firestone Ford Circulator

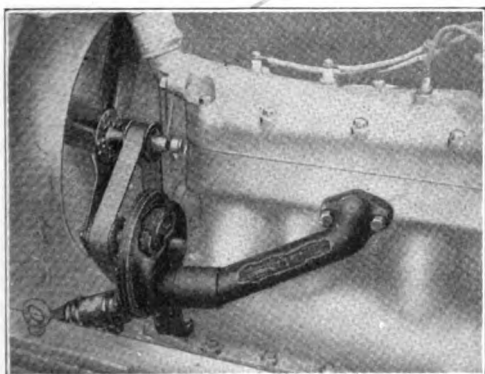
"A NECESSITY FOR THE FORD CAR"

The First Centrifugal Water Circulator

Built for Ford cars, tractors or trucks. Places the Ford among high-class cars.

We guarantee this Centrifugal Circulator to keep the motor so cool that you can lay your hand on the radiator after running several hours idle.

THIS CIRCULATOR SAVES THE SMALL PRICE OF IT IN LUBRICATING OIL ALONE, as you will find a cool motor uses less oil, and less carbon is formed because heat creates carbon in the firing chamber.



Firestone Water Circulator on Ford

ELIMINATE the pounding from your motor, as a hot motor develops heat knocks on sandy roads, hill climbing or a heavy pull. Easy to install on any Ford.

PRICE COMPLETE
New belt and bolts ready to install
\$9.00 F. O. B. Chicago, Ill.

FIRESTONE SALES COMPANY
1806 Michigan Ave. Chicago, Ill.

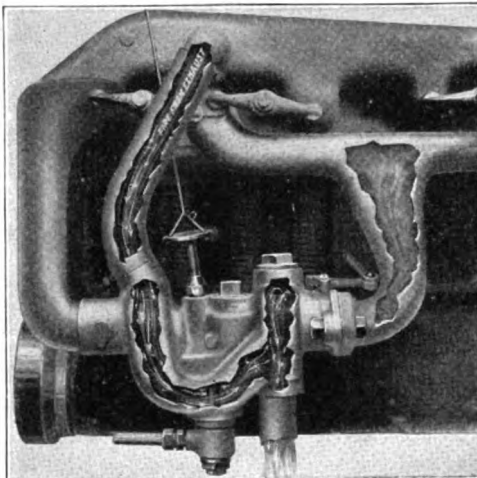
MR. DEALER!

The Most Satisfactory Kerosene Burner for Fords

GILSON-FIRESTONE CARBURETOR

THE MASTER OF ALL FUEL

The Gilson-Firestone Carburetor burns kerosene better than any other carburetor burns gasoline.



When purchasing a carburetor get one that will burn kerosene (coal oil), distillate or gasoline without any readjustments.

31 Miles Per Gallon PRICE COMPLETE, READY TO INSTALL

Carburetor for Gasoline only **\$18.00**
Carburetor for Kerosene (coal oil) including extra tank and water circulator **\$30.00**

The New Firestone Hot Manifold for Fords

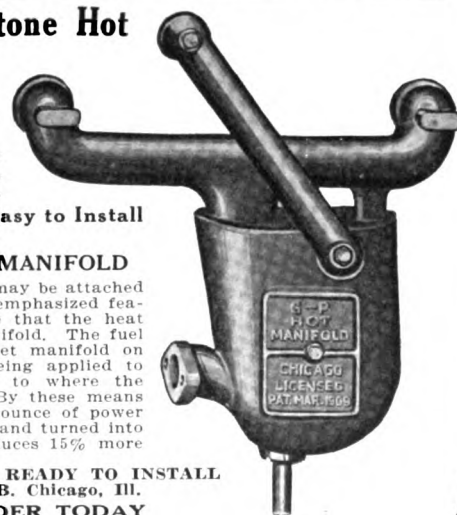
For all Ford cars, tractors or trucks.
15% more power—
25% less gasoline—Easy to Install
—Fully Guaranteed.

THE FIRESTONE MANIFOLD

is a complete unit and may be attached to any Ford car. The emphasized features of the device are that the heat is around the inlet manifold. The fuel is vaporized in the inlet manifold on account of the heat being applied to the manifold adjacent to where the fuel tends to collect. By these means it is a fact that every ounce of power in the fuel is extracted and turned into useful energy, and produces 15% more power.

PRICE COMPLETE, READY TO INSTALL
\$7.50 F. O. B. Chicago, Ill.

SEND ORDER TODAY



FIRESTONE SALES COMPANY, Date.....
1806 Michigan Ave., Chicago, Ill.

Find enclosed \$....., for which ship me the following:

I will install on Ford, and if the device does not meet all the claims you make for it, you will refund purchase price— **I can use device 30 days FREE.**

☐ Send me your complete line and dealers' discount. Name

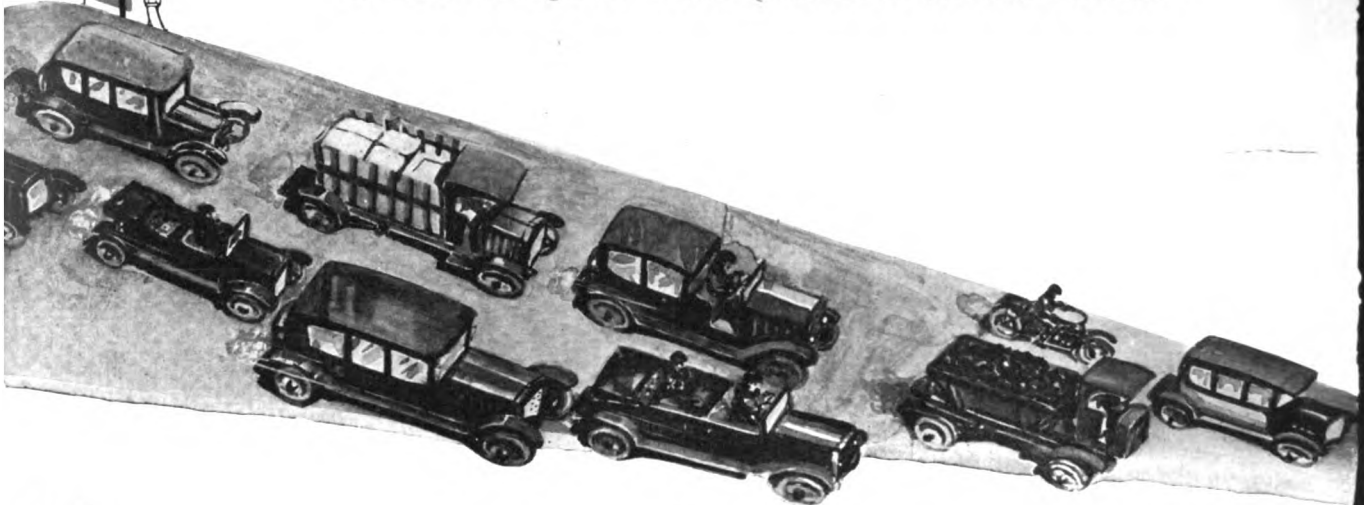
☐ Please send me your agency plan. Street Address

☐ Check information desired. City..... State.....



They pass the blind pump

Blind gasoline pumps are a thing of the past. Stations which still cling to "blind" measurement, cannot compete with **VISIBLE** measurement.



They go where they can see

Car owners go where they can see gas **measured** in the glass reservoir. The station using the **GUARANTEE VISIBLE PUMP** quickly increases business, establishes confidence and makes satisfied customers.



*Approved by the Underwriters' Laboratories
of the National Board of Fire Underwriters*

Serves customers quickly. Impervious to weather conditions. Handles one or more grades of gas—from every standpoint superior to the ordinary device. **GUARANTEE VISIBLE PUMP** is a sure, certain, profit maker. We have the proof. Let us send it to you.

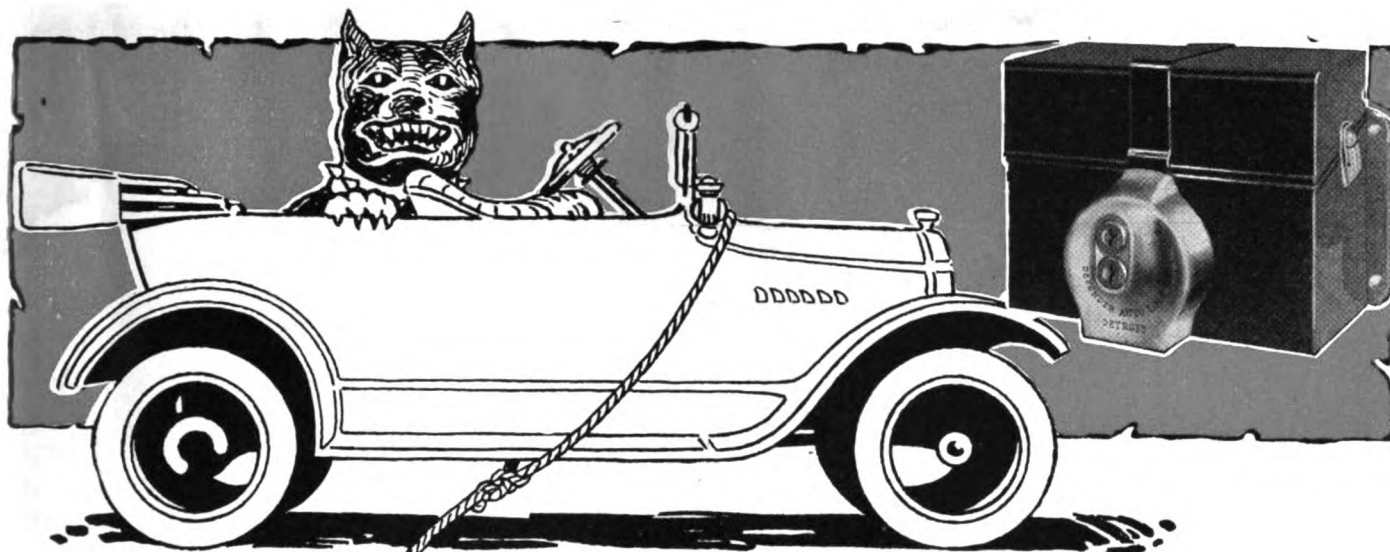
GUARANTEE LIQUID MEASURE CO.

Hepburn Walker, Distributor

Farmers Bank Building

Pittsburgh, Pa.





Fords are securely anchored with DEFENDER AutoLock

Positive assurance that his Ford will remain unmolested by thieves and will BE THERE when he returns is what the Ford owner gets when he puts on a DEFENDER AUTO-LOCK. His car is safely anchored—no amount of pilfering can overcome the locking qualities of the DEFENDER AUTO-LOCK—they lock the ignition box and safely guard your coil units also.

Cost — \$4.00
Worth — the
price of the car!

DEALERS PREFER TO SELL THE BEST

That's why DEFENDER AUTO-LOCKS are sold by thousands of dealers from coast to coast—they realize that the DEFENDER AUTO-LOCK will perform its duty and stand guard over their customer's car.

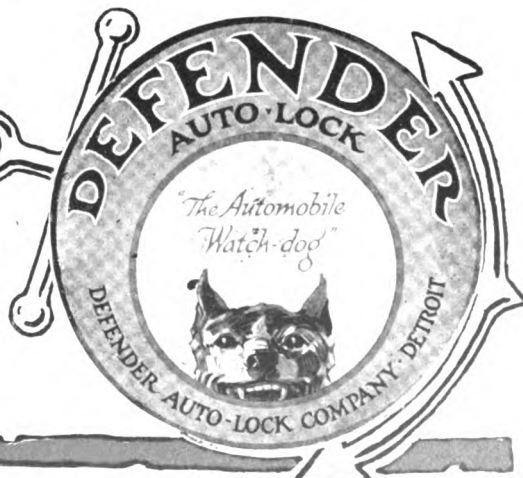
How many times have motorists said—"I must get a lock for my Ford" and neglected to do so until their car was stolen. A \$4.00 DEFENDER AUTO-LOCK would have saved them this several hundred dollar loss. A DEFENDER AUTO-LOCK is worth just as much as your customer's car for it will save him that loss. The grounding device which prevents tampering with the ignition and starting car without the use of switch is an exclusive feature of the Defender.

WHY NOT recommend and sell the best—the DEFENDER AUTO-LOCK

DEFENDER AUTO-LOCK CO.

5th Floor Marquette Bldg. Detroit, Mich.

Canadian Gen'l Electric Co., Limited, of Toronto, Sole Distributors for Canada.



There's a greater demand now for **MIAMI TRAILERS** than ever before

If you are the most aggressive dealer in your territory, you can "cash in" on the present demand for trailers, and make big profits.

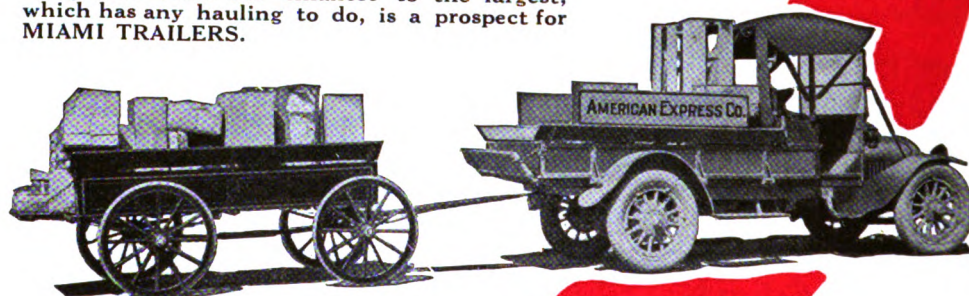
Every firm from the smallest to the largest, which has any hauling to do, is a prospect for MIAMI TRAILERS.

Here's the answer to your "perplexing" sales problem:

Probably you have wondered what you would get to substitute for trucks and pleasure cars, which are becoming more difficult to obtain. MIAMI dealers are cleaning up—*so can you!*

You can soon tell how many trailer sales you can make, by checking up the number of firms in your city or territory that are using horses and wagons, automobiles or motor trucks. We furnish dealer helps, follow-ups, and will circularize your prospects.

Write for particulars immediately, concerning the MIAMI sales plan.



American Express Co. doubles capacity of 1500 Buick



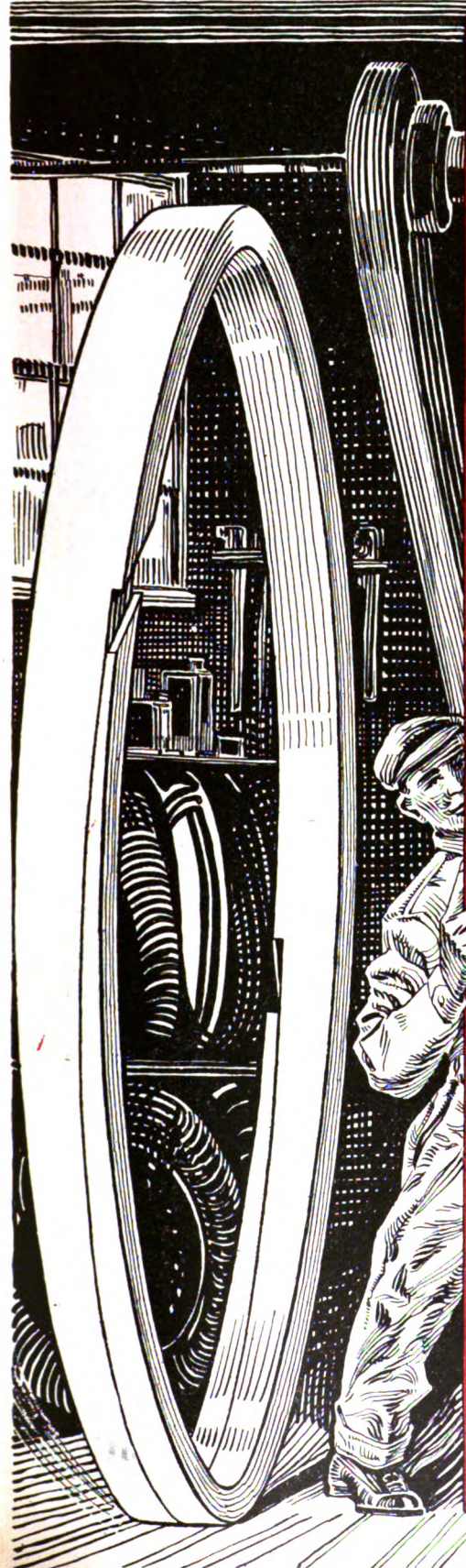
Trojan Coal Company, Troy, Ohio, doubles the capacity of one-ton truck

The Miami Trailer Company

TROY (Miami County) OHIO



YER, GARAGE, AUTO REPAIRII



Open your door to this opportunity

More than 5,000,000 cars are in use. Hundreds of thousands need new piston rings right now.

We are spending thousands of dollars to drive this fact home to every car owner. Our full pages or half pages in the

Saturday Evening Post
Literary Digest **Collier's**

are proving to motorists that it *pays* to put in gas-tight piston rings—and that the *best* place to go for new rings is to the garage that handles *Inlands*.

INLAND

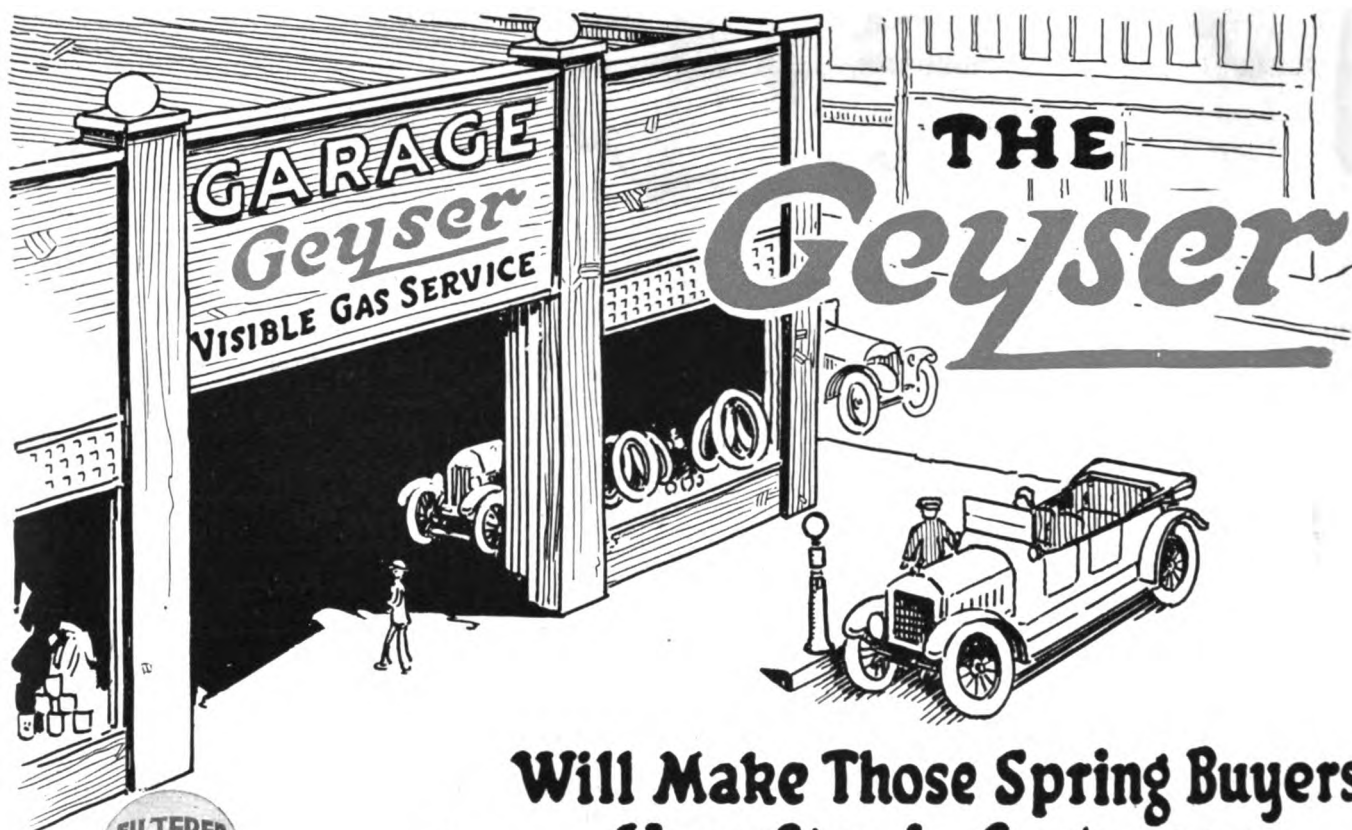
1 PIECE PISTON RING

Open your door to this Inland opportunity. It will mean a far bigger over hauling business for you. Our complete local plan, free for you, will bring *direct to you* the full value of our national advertising in your district. Get this now. Write us today.

Inland Machine Works,
817 Mound St., St. Louis, U. S. A.

Spiral Cut makes the Inland absolutely gas-tight. One-piece construction makes it low-priced. Equal width and thickness makes it strongest and most durable.





Will Make Those Spring Buyers Your Steady Customers

*Prepare now to get that big
Summer Gas Business!*

The GEYSER Visible Gasoline Dispenser will make your garage the popular gas station—it saves the customer a wearisome wait, for you can wait on two customers with the GEYSER in the same time that it takes to wait on one with any other pump.

The GEYSER enables the customer to see what he is paying for. You gain his confidence and he is willing to acknowledge honest treatment. The GEYSER is the best advertisement you can get for your garage—it makes regular customers out of occasional buyers—it brings you new trade—it makes you money.

The GEYSER is the most serviceable gasoline pump made. It is constructed to give honest measurement, to last, to measure up to what YOU think a pump should; it is the pump YOU want. You not only save money when buying the GEYSER, but you make more money on your gas.

Now is the time to install that new pump—get ready to round up the Spring buyers and make steady customers of them.

Write us today for free illustrated descriptive literature. We sell the GEYSER on a "SATISFACTION GUARANTEED" basis. We know you will want it.

\$125.00

F. O. B.
Pittsburg

**THE VISIBLE GASOLINE DISPENSER COMPANY
PITTSBURGH, PENNSYLVANIA**

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

Removal Notice	24
Organize Return Load Bureaus for Trucks.....	24
Interference with Drive-Aways.....	24
Sell More Accessories	24
Put Business on Cash Basis.....	25

GENERAL

The Builder	11
Substantial Profits Can Be Made Selling Truck Makers This Year—By Geo. W. Hipple.....	12-13
National Dealers' Body Stops Interference with Drive-Aways	12
Big Movement Started to Enlist FARM Aids.....	14-15
Two Accessory Shows for Chicago Next Fall.....	15
Dan Thrift Induces His Friend to Get Good Tractor Agency	16-17
Put Some "Pep" Into the Displays for Your Window Olympian Is Good Hill Climber on Steep Augusta Grade	17
Direct Circularizing Brings Results.....	18-19
National Chamber of Commerce Advocates Return Load Bureaus	19
THIS Garageman Understands How to Advertise Profitably	20
Logical Hour for Motor Truck Due to Wartime Conditions	21
Courage Is Vital Necessity for a Successful Salesman All Must Buy Liberty Bonds, Writes Koether, in Quieterion	22
How the Daylight Saving Plan Works.....	23
Prescott Sales Manager for Disco Electric Firm.....	25
Winning Retail Tire Laurels in America's Rubber Capital	26-27
What Was Your Best Advertisement?.....	29
Detterich New "Ad" Chief in Bearings Service Firm Postal Zone System to Penalize Readers.....	29
Victor Moon Is Engaged by Ohio State Trade Body..	34
Martin "Baby Tank".....	36
Motor Accessories Concern Announces Syndicate Service	36
Car Names in Electric Signs Bring Trade to Agent's Door	38
Signal Motor Truck Firm Not to Merge with Paige..	38
Car Buyers Are Prospects for Farm Electric Systems R. & P. Tractor.....	40
Avery Company Conducts Tractor Service Schools..	40
New Dump Body Produced to Haul Grain on Trucks King Trailer with Big Load.....	42
Legal Notice	42

DEPARTMENTS

How to Make the Shop Pay.....	28
Welding, Cutting and Brazing	30-32
Mechanical and Engineering Problems	34
Accessories and Garage Equipment	44-46
Buyers' Reference	60
Index to Advertisers	61

American Garage & Auto Dealer, Inc.

General Offices:
116 S. MICHIGAN AVENUE
CHICAGO, ILL.

Kresge Building
Detroit, Mich.

52 Vanderbilt Ave.
New York City

J. R. HASTIE, *President*
H. D. FARGO, *Vice President* E. C. HOLE, *Vice President*
E. T. CLISSOLD, *Vice President*
J. C. KELSEY, *Secretary and Treasurer*

EDITORIAL

R. B. JOHNSTON, *Managing Editor*

ADVERTISING DEPARTMENT

A. J. Watson, *Eastern Advertising Manager*
M. Cornfield, *Western Advertising Manager*
C. O. Linden, *Manager Copy Department*

Entered as second-class matter, March 1, 1916, at the Post
Office at Chicago, Illinois, under the Act of March 3, 1879
Subscription Per Annum (Postage Paid) \$1.00. Advertising
Rates on Request



"NORMA" BALL BEARINGS

(Patented)

The "nerve centers" of the car and truck—so may be defined the ignition and lighting apparatus. Weakness, inadequacy, at these centers reacts throughout the machine. Failure at these points means a failure of all the nerve-controlled functions of the car or truck. Can a car, truck, or man show "stamina," with an inherent weakness at the nerve centers?

"NORMA" Ball Bearings, by their superlative speed qualities and proved serviceability, contribute mightily to the rugged strength and service capacity of those high-grade magnetos and lighting generators which are the "nerve centers" of all cars and trucks of proved dependability.

**Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped**

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.



A \$50.00 Liberty Bond buys 1000 cartridges—Invest for 2000

"You don't have to buy from us, but you will"



Mr. Dealer and Garageman

If you assure the Automobile owner, throughout the country, that he can purchase all of his accessories through a well-organized chain of retail stores and that he will receive uniform quality and product without substitution or delay, he will become a customer of yours.

Retail chain-store corporations, as you know, are successful in every line.

Our business is the Automobile Accessory Business and is founded upon and governed by the methods which have been successfully employed in other industrial lines. These methods protect those who become one of us and elevate the motor accessory field to a plane approaching perfection, finally resulting in satisfied dealers and consumers.

Our Policy is

ECONOMY, EFFICIENCY and BETTER SERVICE

If you want to know what is necessary to become one of us—

If you want to know what you have to do to become one of us—

If you want to know why it will pay you to become one of us—

If you want to know what we do for you when you become one of us—

If you want to know how we increase your business—

If you want to know how and why our name will become a home-word to the motorists throughout the country—

If you are the man with enough foresight to grasp an opportunity and take advantage of it when it is presented to you—

Write Us for Further Information

MOTOR ACCESSORIES CORPORATION

H. J. Curtis, Genl. Mgr.

170 Broadway, New York

"You don't have to buy from us, but you will"

Deal Kaiser Bill a body blow—Buy a Liberty Bond—buy Two



The Builder

The year 1918 bids fair to be the dealer's biggest opportunity in the automotive field.

There is an unprecedented offering by present conditions of a remarkable chance for the aggressive dealer. It must be the aggressive dealer—there seems to be no room for mediocrity. The dealer who profits by the advancing ideas and practice in the automotive field must get into the current of progress and modernize himself and his business. This business must of necessity be kept abreast of the times or rust out.

The passenger car dealer who does not handle commercial cars is sacrificing an opportunity to progress. The dealer who is not making a careful study of the farm tractor situation in his locality is lagging.

TODAY IT IS PROGRESS OR REGRESS.

AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX. No. 4

New York—CHICAGO—Detroit

April, 1918

Substantial Profits Can Be Made Selling Truck-makers This Year Dealers and Garagemen in Small Towns Have Chance to Cash in on Present Opportunities

By **GEORGE W. HIPPLE**

General Sales Manager
Redden Motor Truck Company, Inc.

If you can produce more you can make more money, which would make it possible for you to more than DO YOUR BIT.

The Daylight Saving Plan put into effect by the Government, at 2 a. m., March 31, is now considered a wonderful advantage, and how to make it possible to do more by the use of trucks in 24 hours, has still greater advantage.

Transportation, as we are fast realizing, is one of the greatest problems which now confronts and affects us all. Freight cars must be loaded quickly and because of the shortage of same, must be unloaded equally as rapidly.

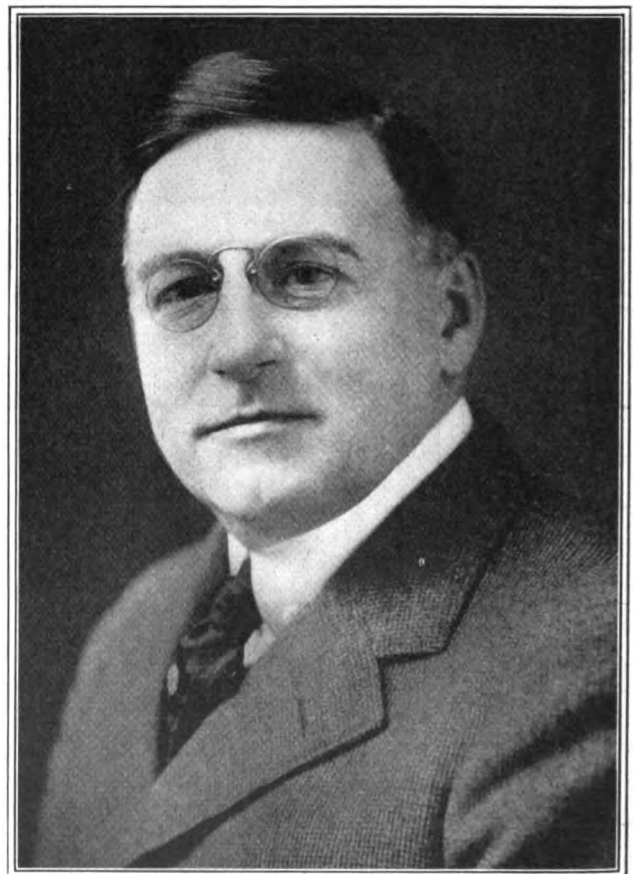
Farmers must make it possible to spend more time on the farm, producing more. Trucks will do their part in accomplishing this, making the necessary trips to town more quickly and less frequently, because of their greater carrying capacity over horse-drawn vehicles.

The Truck Maker fills a large demand because of its low cost of up-keep, and can be used for 95 per cent of all necessary hauling, for the reason that the only thing that the Truck Maker can not haul, must be something that weighs, in a single unit, more than $1\frac{1}{2}$ tons.

Just stop to consider how many things you can think of that will weigh that amount and how frequently are they required to be transported by trucks—then you will appreciate what a large part the Truck Maker is able to accomplish in transportation.

Increase Earning Capacity.

You dealers, garage and repair men are now in a position to sell Truck Makers and make more money for yourself which will permit you to invest more money in Liberty Bonds at practically the same overhead, by show-



George W. Hipple.

ing its value to the man who now is not aware that he is a prospect and don't know what a light truck will do for him, how it will increase his earning capacity, because he can do more. This will also make him invest more in Liberty Bonds, and neither will he increase his overhead because the truck will practically pay for itself.

Most farmers now have Fords, and it is only necessary to sell them \$350 worth in order to make it possible for them to own sturdy one-ton trucks, easy to operate because it is the same motor and mechanical construction that they have been accustomed to, and the cost of upkeep is very low.

Just STOP and THINK. The farmer can deliver his Ford over to one of our Redden dealers in the morning and receive it back converted into a dependable one-ton truck the same day and we don't alter his Ford, either.

A Patriotic Duty.

Every one who is a true American owes it as his patriotic duty to his country to do everything in his power to not only increase his own efficiency but also to assist others to do the same thing.

If dealers, garage and repair men in small towns will take advantage of the opportunity that presents itself now to help themselves and likewise the country to educate those who do not understand the advantage the Truck Maker offers they will be sure to make more money.

The passenger car shortage which was predicted some time ago is now a reality. This is shown also in the shortage of good used cars. Many dealers with whom I have talked recently said that some time ago they were overloaded with used cars but now they are practically cleaned out.

The new passenger car shortage is, of course, largely due to the fact that most manufacturers have curtailed their output, and in doing this most of them had no choice due to the fact that a large portion of their producing capacity is now occupied by Government contracts—so again I advise you to turn a portion of your energy over to motor truck transportation and the shortest route is through the Ford truck attachment.

The Gold Is Buried.

I have tried to show you where the gold is buried, but YOU MUST DIG IT OUT.

When you hit on a good series of sales arguments which have been proved through actual trial by you to successfully market our Truck Maker, our advice is to use them on every prospect, as each time you will deliver with more force and much easier than you did on the previous prospect.

Remember, the actor finds that the longer the play runs the more efficiently he delivers his lines.

Consider that he goes through the same thing every night and holds our attention, but also that he plays to different audiences each time.

You talk to a different prospect each time, so tell them all the same thing when you are sure you have hit on the right plan. Then plan your work, and work your plan.

This is the first of a series of articles on the profit possibilities for motor tradesmen of handling truck making attachments. The author, George W. Hipple, has been a dealer himself so that his messages to motor tradesmen to be printed in the AMERICAN GARAGE AND AUTO DEALER come from a man who has had a foundation of actual experience in the retail automobile marketing field which has given him a knowledge of selling problems that is seldom possessed by a factory executive.

Mr. Hipple entered the automobile industry in 1908 after graduating from the sales force of the National Cash Register Company, which is acknowledged to be one of the greatest training schools for salesmen in the world. He was a member of the Levy-Hipple Company in Chicago, and in 1909 was in the Chalmers-Hipple Company at Philadelphia. Later he became associated with the Carl H. Page Motors Company of New York, distributor of Mitchell cars in half a dozen states, for whom he was general manager.

His work for the Page organization in training the salesmen at its five branches and in sales organization and promotion work among the Mitchell dealers and their men in the Page concern's territory was so successful that Mr. Page was induced to release Mr. Hipple in order that he might become merchandising counsel for the Mitchell factory. He repeated all over the country the successful record he had made in New York. Mr. Hipple has been engaged by the powerful financial interests behind the Redden concern to direct the sales work of that organization.

National Dealers Body Stops Interference with Drive-Aways

Pennsylvania Officials Give Up Demand that Cars Bear State License Tags---Illinois and Wisconsin in Line

The National Automobile Dealers' Association has demonstrated during the past month the valuable service it can render the dealers of the country by successfully setting aside interference of State authorities in Eastern and Mid-Western sections where factory drive-aways have been held up for lack of State license plates.

The recent hold-up at York, Pa., of a fleet of Oldsmobiles being driven from Lansing, Michigan, to the Oldsmobile Company of New York, was the most flagrant effort to inconvenience dealers indulging in

factory drive-aways since the freight situation became serious enough to effect factory shipments.

Director A. E. Maltby of Philadelphia, representing the National Automobile Dealers' Association in the Eastern States, with the assistance of the secretary and president of the National Association, made vigorous protests to Governor Martin G. Brumbaugh and State Highway Commissioner J. Denny O'Neil of Pennsylvania and Mayor E. S. Hugentungler, of York, Pennsylvania.

An appeal was also sent to Director General of Railroads W. G. McAdoo, and within forty-eight hours after claims for non-interference with factory drive-ways, the following telegrams were received at the National Automobile Dealers' Association's headquarters:

Harrisburg, Pa.

National Automobile Dealers' Ass'n,
Milwaukee, Wis.

In connection with your letters relative to the registration of motor vehicles while in transit from point of manufacture to destination, and after giving this matter careful consideration I am glad to advise you that I have today written a letter to all chiefs of police in the State suggesting to them that they refrain from making informations in cases of this kind.

J. D. O'NEIL,

State Highway Commissioner,
York, Pa.

(Continued on page 17.)

Big Movement Started

Motor Tradesmen Have Chance to Help Their Country's Cause

If soldiers are willing to serve in the trenches, to dig ditches, build railroads and risk their lives, many civilians can well afford to spare a part of their time to serve in the furrows and in the harvest fields.—Secretary of Agriculture.

Motor tradesmen who live in localities near farming districts can do a good deal to help relieve the labor shortage on farms this year by offering to see that a certain amount of labor is done by themselves personally or by their employes. This is in addition to the help they can give by doing everything in their power to extend the use of tractors and trucks by farmers.

Business men in other lines—the lumber trade especially—are planning to do a good deal along these lines. Automobile men who will do this and help to get others to follow their example will help to solve the farm labor shortage. They will be able to accomplish a good deal to assist in winning the war, while at the same time they will benefit their own communities and very often enjoy better health as one of the results. The plan has been explained to the Secretary of Agriculture at Washington and received his enthusiastic praise.

Even in cases where automobile men are so situated that it will not be possible for them to do any work themselves a suggestion is made that they can help a great deal by using their own passenger cars to carry city or town volunteer farm workers to and from their homes morning and evening to the farms where they will perform their patriotic labors.

J. R. Moorhead of Lexington, Mo., who is Secretary of the Southwestern Lumberman Association, has had considerable success in advocating this plan, and his example can well be followed by officers of automobile trade associations as well as individual motor tradesmen. Mr. Moorhead describes his plan as follows:

"The way to organize these farm help clubs is for the business men of the communities to get together and first pledge themselves to give so many days' work and also to pledge so many days' work from their employes or assistants—either one or the other, or both.

"A card index then should be made of those who pledge either their assistants in temporary farm work or those who may want to go on the farm and work for a longer period. This information should then go to the farmers through the newspapers or by circular letter that

so many business men in the community have pledged so many days' work on the farms whenever they may be wanted and whenever called for, and that so many men are pledged for permanent farm work during the summer.

Scouts Can Help.

"Included in this list of voluntary farm workers should be the Boy Scouts or other school boys big enough and able to do farm work. A central office should be maintained for an intermediary and for telephone purposes to get the farmer and this labor together in order that he may know where to find it. Communities that depend altogether on agriculture for their business can afford to close up during harvest week in order to put this thing over, not only for their own benefit but the one big thing that we are all working for—to save grain and crops for war purposes.

"The automobile will facilitate the handling of this emergency labor. It will not be necessary for these business men to even sleep at the farm houses, and the farmer's wife will thus be relieved of the excessive and extra work placed upon her by feeding harvest hands. Besides many of these business men will want to go home to attend to minor business matters at night, and the merchant could even afford to close his store during the day time and keep it open at night to take care of his customers.

"My personal experience at Lexington, Mo., on this matter was just this: I went over at the invitation of the City Club. I talked to fifty business men, lawyers, professors, carpenters, contractors, and everybody interested in the upbuilding of that community. After presenting the matter, I asked them to sign a service card. (Shown at top of next page—EDITOR.)

"I secured pledges from forty of those fifty men of 254 days' work, either to be performed by themselves or their clerks or assistants. In addition to the 254 days pledged, one professor in a school notified me that he expected to work during the entire summer on the farm. There were two farmers present, one with his

The soldier and the farmer are eager to do their full share. . . . Both incur risks. Very many civilians are equally eager to do their share but may not appreciate the opportunity to serve in the field of agriculture.—Secretary of Agriculture.

to Enlist FARM Aids!

wife. At the close of the meeting, we introduced one of these farmers to the professor who wanted to work all summer, and they will make a deal accordingly. The farmer will be supplied with a first class farm hand, and the professor will have employment all summer.

Bank Clerk to Be Cook.

"The other farmer who was present with his wife secured a cook out of the number in the person of a man who is employed in a bank, who advised them he could not do farm work but that he was a good cook. The farmer's wife and the bank clerk immediately made a bargain. Thus, we believe, the emergency farm labor problem was at least solved at that meeting at this particular town of Lexington, Mo. It can be done everywhere in the country if the live business men will take hold of it, soliciting first the assistance of the local newspaper, the preacher, the school teacher, and everybody interested not only in the communities' welfare but the big thing of saving crops to win the war.

"One man who signed up for five days' work told me after the meeting that I had cost him \$15. He meant that he was not able personally to work in the harvest field, but that he would have to hire a man to do five days' work. He was a county official. I told him that would get him more votes than anything he ever did in his life, and it was money well spent from a personal standpoint as well as helping the big cause.

I hereby pledge myself personally to perform _____ days' labor in helping the farmer in this locality in emergency farm work.

I hereby agree to release _____ of my employees to perform similar service if called upon.

I hereby agree and pledge myself and to urge my employees to use as much of their annual vacation in farm assistance work as may be possible.

Name.....

Address.....

Phone.....

"One of the things that pleased me more than anything else was the spirit of co-operation and the evident desire not only to help the farmer but to win the war.

"The same day that I was making this little talk at the noon luncheon, of the City Club, the Women's Branch of the National Council of Defense was working in another room, and the local Red Cross women were working in another building. In other words the whole community was working for victory."

Two Accessory Shows for Chicago Next Fall

Two, instead of one, accessory exhibitions will be held in Chicago in the fall, unless the members of the National Association of Automobile Accessory Jobbers oppose the practically unanimous recommendation of the board of directors. The jobbers show, which is planned to be strictly a trade affair, is scheduled for the last week in October at a place yet to be selected from among several on which options have been obtained by Commissioner Wm. M. Webster, of the association.

The other exhibition, formerly known as the National Exposition for Ford Accessories, will be held the week of September 14 on the Chicago Municipal Pier. It has been renamed the Automotive and Accessories Exposition and space will be available for trucks, tractors and motorcycles but not passenger cars. J. E. Duffield, of the Bailey Non-Stall Differential Corporation, is president and B. L. Gray, of Gray-Heath, is treasurer. H. V. Bue-low, who managed the Ford accessory show last year, has been re-engaged as manager.

Among the Manufacturers and Executives.

J. V. Gilmour has joined the Racine Rubber Company's advertising department. He was formerly in the advertising departments of two railroads having terminals at Chicago.

C. F. Eminger has resigned the position of sales manager of the Splittorf Electrical Company of California and accepted the position of director of sales of the Dayton Electrical Mfg. Company, Dayton, Ohio.

O. L. Blanchard, formerly southern representative for the Fruehauf Trailer Company, was recently appointed district manager, having charge of southern and middle western territory.

J. C. Weed, until recently advertising manager of the HAL Motor Company, Cleveland, has become Detroit representative of the Commercial Car Journal, published by the Chilton Company at Philadelphia.

H. T. Melhuish, a brother of William Fulton Melhuish, Jr., president of the Fulton Motor Truck Company, of Farmingdale, L. I., has succeeded E. E. Vreeland as advertising manager of the company. Mr. Vreeland, who remains a stockholder in the Fulton company, recently became an officer of the Abbot & Downing company, at Concord, N. H. Mr. Vreeland is head of the Vreeland Advertising agency of New York.

W. C. Mansfield has joined the Campbell-Ewald Company's organization and is sta-

tioned at its New York office. He was formerly in the Hyatt Roller Bearing Company's advertising department at Newark, N. J.

L. A. Closter has become the Federal Motor Truck Company's district sales manager for Michigan, Ohio, Indiana, Kentucky and West Virginia. He was formerly with E. C. Frady, Cole distributor at Chicago.

E. A. Kingsbury, general manager of the Sanford Motor Truck Co., at Syracuse, N. Y., announces the appointment of F. C. Brown as sales and advertising manager.

W. A. Cluff, auditor of the Mason Tire & Rubber Company, has been elected to the Board of Directors of that company. He has also been appointed first assistant treasurer of the company.

Donald F. Whittaker, former assistant advertising manager of the Federal Motor Truck Company and sales manager of the Detroit Truck Company, has been appointed advertising manager of the Acason Motor Truck Company, Detroit. Mr. Whittaker is a former newspaper man who has scored success in the commercial field.

J. F. Gilmore has recently been elected president of the Taylor Manufacturing Company, at Redford, Michigan. The concern, whose plant is near Detroit, produces tire pumps. Mr. Gilmore was formerly Western advertising manager for the American Motorist and Detroit was his headquarters.

Dan Thrift Induces His Friend to Get Good Tractor Agency

Shows Dick at Lueville How These Portable Power Plants Can Be Profitably Sold to Farmers

Dan Thrift hardly knew how he could spare the time from his own garage to go over to Lueville and help Dick, his old friend who had recently shown a marked amount of energy and was putting new life into his business by doing a bit of hustling. Dan had just received a letter from Dick asking him to come over and assist him in determining what make of tractor he should take the agency for.

Having sold tractors for some months past, however, Dan felt able to offer Dick some valuable advice and decided to do this much for his friend. At the latter's place he was happily surprised to find "the wheels going round" with great energy and Dick busy attending to customers. He was not too busy, however, to greet the friend whose advice had saved his business, and they began looking over the tractor catalogues which Dick had sent for.

"Now," said Dan, "you don't want to make the same mistake I made. When I first decided to sell tractors, I looked for the tractor agency which offered me the largest margin of profit. The result of this was I did not select a tractor suitable to the work of the farmers in my locality, and of course found later that I had to change.

"To avoid this," continued Thrift, "you must know what nature of soil makes up the majority of the farming district in this country. If it is sandy, which I notice a great deal of it is, then you must select a tractor which will keep its traction on soft surface under load. You must also find out, Dick, whether the farmers want 2 or 3 bottom plows. If the 2 bottom seems to be the favorite, fit the capacity of your tractor to 2 bottom work in this soil—do the same thing if they want the 3 bottom."

"What about the price," asked Dick, "should I try and sell a high priced tractor to these farmers who have never bought tractors before?"

Cost Is Least Consideration.

"The farmers," replied Dan, "are not so apt to shy at a \$1,000.00 or \$1,500.00 price on a tractor as they formerly were due to their having been educated up to a point of thinking in bigger figures through their buying automobiles and trucks. They realize today that first cost is of the least consideration. Select a tractor that will do the work, which will stand up and sell other tractors for you, and one that represents dollar for dollar value, and you will find the actual price cuts mighty little ice, just so long as it is reasonable."

"Do you know," asked Dick, "I'm just a little shaky on this tractor proposition. These farmers here are pretty skeptical and they'll be mighty hard to convince."

"Yes," replied Thrift, "they are skeptical, or make you

think so at least, but take it from me if you post yourself on their problems, learn what a tractor should do to be of value to them, study farming a bit so that you will understand the value of good plowing, etc., so that you can talk intelligently to them of their work, and then go after them, they will welcome you with open arms and wide pocket books. Why, do you know, Dick, you have the best argument in the world in selling tractors—and that is saving them money and making them more money.

"Do you know, Dick, that every horse requires all that five acres will produce in a year to feed that animal. If a tractor will eliminate 2 horses the farmer saves the difference between the cost of gasoline and oil to operate the tractor and what 10 acres will produce. And remember a tractor can go for weeks without eating unless it is working—horses are not built that way.

"Don't overlook the fact that belt power is furnished by the tractor. The farmers can operate their feed mills, wood saws and many other pieces of machinery with tractors

Study Farmers' Problems.

"To sum the whole affair up," continued Dan, "be sure you are right—that is, be certain that you understand both the farmer's problems and your own. Be sure you know what to recommend and what not to recommend. Make a study of the tractor. Thoroughly understand proper lubrication so that you can impress the necessity of this upon the farmer.

"After you know you are well prepared for the drive and have contracted for your tractor, get a list of farmers in your territory and start sending them literature on your machine.

"A good thing I find, Dick, is to select a list of about 25 or 50 well to do farmers in a certain section and send them a personal letter telling them that you will be on some neighbor's farm—which should be about centrally located for the list you write to—on a certain morning and will plow a few acres of ground with your tractor. Invite them to come over to see this work done. You should make arrangements in advance with some one to allow you to plow his ground free so that they will have plenty of time to advertise your demonstration. In this way you become acquainted with the farmers and learn who your best prospects are.

"I find there is a leading farmer in every locality and you should try and hold this demonstration on his farm. If you can sell the leader, all the better, for then many others will follow on his recommendation alone.

"Hold one of these demonstrations in some section of

the country every week until you have your tractor thoroughly advertised. When holding a demonstration, do not fail to tell your visitors all the things your tractor will do on the farm. This is mighty important and will help you a lot. Show them how it enables one man to do almost the work of two, saving time, money and labor.

"Be very careful to explain to them how it increases the yield per acre by plowing deeper than is possible with a team of horses and turning up the lower strata of rich earth. Also impress upon them that a tractor will, with care, last for many seasons.

"Now, getting back to tractors, this 'Red Boy' seems

to be just about the machine for you. It sells for a medium price and allows you a good profit. I notice it is made up of well known and guaranteed parts, which is a big thing, Dick, as most every farmer today knows what motor, gear, axle, radiator, etc., is recognized as standard.

"I would advise you to look into this 'Red Boy' further and make sure that it is the one for your section of the country and if it is, hop to it before some other live wire here gets the agency for it.

"And when you get the agency, Dick," Thrift concluded, "line up your big guns and go to it, and you'll surely bring home the bacon."

Put Some "Pep" Into the Displays for Your Window

Attractively Arranged Showings Induce Business—Change Exhibited Articles Frequently

Attractive window displays have revived many a lagging business and increased the profits of a merchant or concern whose trade had been thriving. But the principal thing to remember in connection with window dressing is that it is necessary to make

down displays made by its readers. When you have had good success with the way your window has been trimmed, send us a picture of the window display, accompanied by a description of how you arranged it, and tell us what the result was in dollars of sales made as a result. We will gladly pay \$5.00 for each photograph which we accept for publication.

Don't hesitate to send in your photographs because you think your window display was not elaborate enough for our purpose. As a matter of fact, we are more interested in the window displays that have been easily and quickly arranged at little or no expense than in the elaborate displays such as are seen in the windows of the great department stores, and which require elaborate backgrounds or other costly fixtures.

Olympian Is Good Climber on Steep Augusta Grade

An Olympian stock car made another record for itself March 17 at Augusta, Ga. A steep grade that has been the scene of countless automobile tests and which has dashed the hopes of many over-confident motorists was easily surmounted by the Olympian car in a high gear trial. The Hill road, which is almost a mile in length, is extremely steep and an excellent test for the hill-climbing qualities of cars.

"With Mr. F. Norwood, manager of the Olympian Motor Sales Co., at the wheel and D. R. Pettit, of The Chronicle as observer, the entire hill was taken on high," states the Augusta, Ga., Chronicle. "Shortly before reaching the start the road was obstructed by two trucks, from which cinders were being removed. The Olympian was driven to the side of the road and

pulled through cinders almost hub-deep. This forced Mr. Norwood to slow down to about 5 miles an hour. At this speed the start was made, but, despite the fact that the grade became more difficult, the car gathered momentum and increased its speed to 10, to 15, to 20 and on up until the top of the hill was reached, where the speedometer registered 32 miles an hour."

National Dealers Stop Drive-Away Interference

(Continued from page 13.)

National Automobile Dealers' Ass'n,
Milwaukee, Wis.

York, Pa.

Highway Commissioner O'Neil has issued orders permitting fleets of automobiles free use of state highways in Pennsylvania with transit cards of manufacturers on each car. He requests the front of the first car and the rear of the last car of each fleet to have a dealers' license tag so the identity of the fleet of cars can be seen. York City will be glad to render any assistance possible to all fleets of cars that arrive in this city and we shall welcome all such trains that stop in York at any time. We will gladly co-operate and afford every facility at our command to assist in the relief of the present railroad congestion.

E. S. HUGENTUNGLER, Mayor

Similar incidents were likewise handled by the National Automobile Dealers' Association in Wisconsin and Illinois. Officials of the dealers' association went before the special session of the legislature in Wisconsin and obtained the passage of an amendment to the State automobile license law permitting passage over State highways of fleets of automobiles between factories and dealers' destinations.

\$5 for an Attractive Window Display

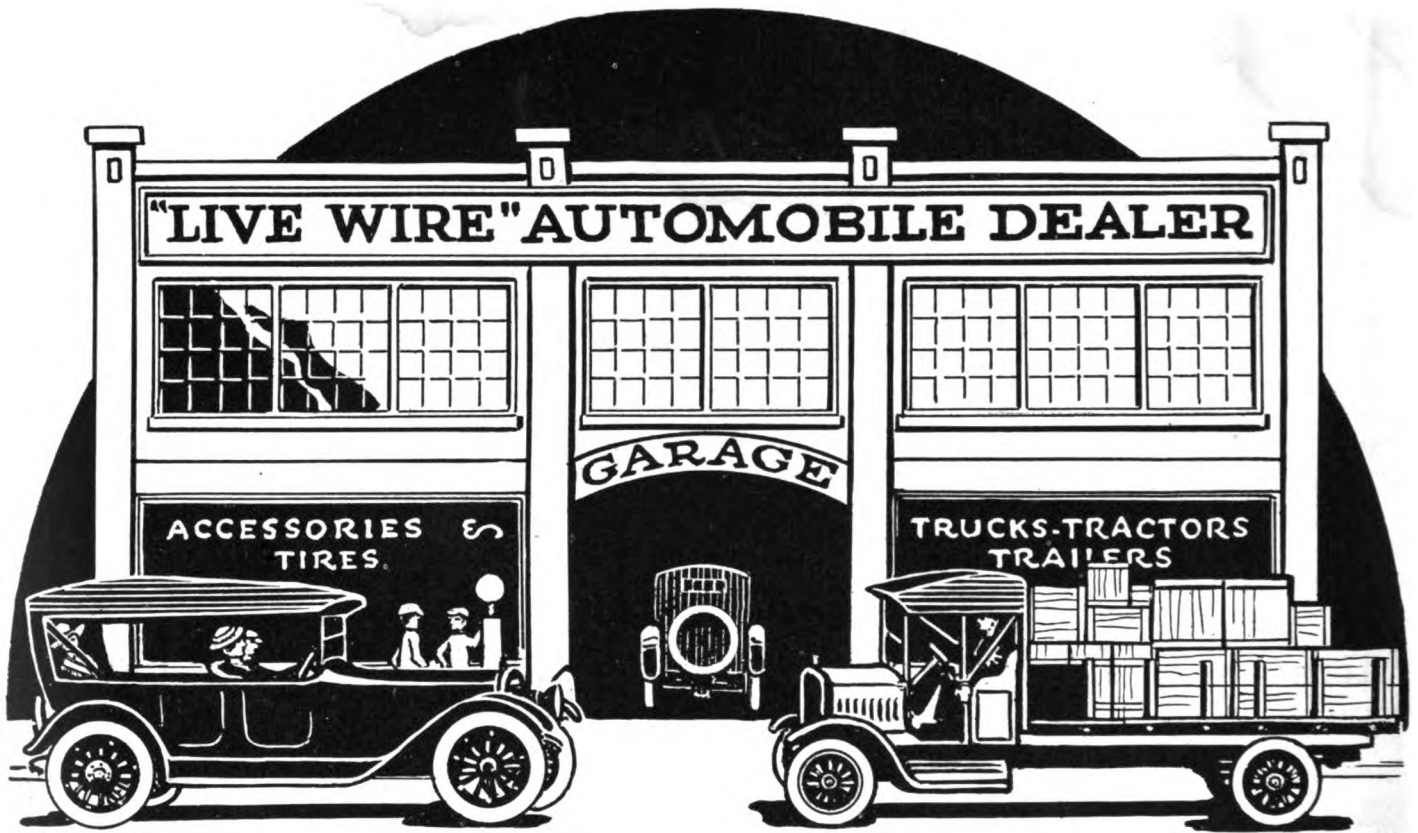
If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

them striking; in other words, to put some "pep" into your window displays.

But simply rearranging the same things in the window is not the best plan, for it is a good idea to have different articles included in those to be put into your window to attract business into your establishment.

It is not necessary to spend a great deal of money, and a good many of the most attractive displays are made at little or no expense except for the time devoted to arrangement.

The AMERICAN GARAGE AND AUTO DEALER is interested in the effective win-



Direct Circularizing Brings Business

WHETHER you are a small-town or a large city automobile tradesman makes no difference. You can circularize your trade with profitable results.

In this manner you can get the "jump" on your competitors. You can broaden out. You can BUILD your business.

No business will work of its own accord. Motive power is essential. Pressure which is efficiently applied in the proper direction will bring the indifferent prospects into line. Circularizing because of its economy, directness, secrecy, and profitableness should appeal to you.

By concentrating your efforts entirely on persons who are financially able to buy and who through necessity must be buyers of automobiles, trucks, tractors, trailers and accessories, you can treble or quadruple your net profits.

Eliminate "waste" before you start to circularize and you will not spend

your money uselessly on impossible prospects or unprofitable names. Neither should it be difficult to get a list of worth-while prospects in your territory.

If you are selling tractors, compile a list of the farmers within a reasonable selling radius. The same principle holds good for trucks and passenger cars. *Get the right list of names.*

Method Not Mysterious.

There is nothing complex about direct advertising, neither is it mysterious. But it is necessary to obtain a list of prospective purchasers who can buy and who do buy. You can compete for trade just as well as the big six-cylinder firm down the street, without being overshadowed in the least, if you use direct advertising, and you can, moreover, advertise special automobile offers or bargains to your prospects without exposing your hand to any one else.

Another advantage which direct ad-

vertising enjoys is that you obtain the entire attention of your prospects, and hold it until they have read your letter, postcard, announcement, folder or booklet. And you are able to make a personal heart-to-heart appeal, warming up their interest and enthusiasm, and getting them more quickly interested than any other form of salesmanship—unless it is personal solicitation—ofttimes direct-by-mail contact is the most logical admission ticket for the salesman who follows.

Appeal Each Week.

Each week, or as often as possible, you might send out a piece of printed matter to your prospects. Sometimes you can use a form letter, rotated with a little booklet, blotter or calendar. If you are writing to a list of passenger-car prospects, enumerate the advantages of automobiles as compared with other means of travel. Show them that an automobile is a genuine convenience—a real necessity. If you are selling trucks, pre-

sent the advantages of the truck over horses and wagons for hauling and delivering. And so on with trailers and tractors.

Get the habit of direct advertising. It is a good habit! Your friends and neighbors are human like you. They like to get attention. They appreciate letters. The chances are, if you would get out a good strong letter to one hundred or two hundred names every week, accompanied by a return post-card announcing that you have a new tractor, truck, passenger car, or trailer on exhibition you would get back many interested answers. On the return post-card you might signify willingness to give a personal demonstration or you could ascertain when

it might be convenient for your prospects to call on you, or you on them.

Make Letters Personal.

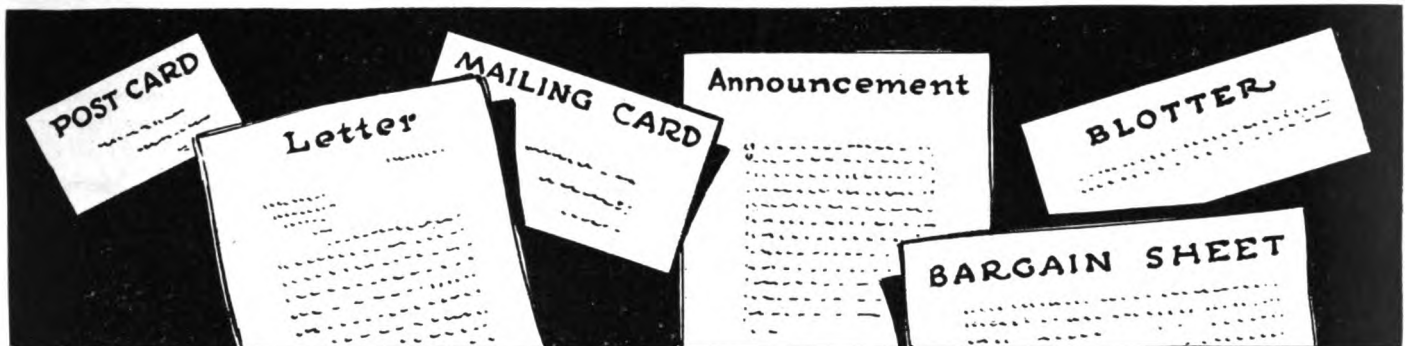
Have somebody in your office type-write the letters or perhaps you can have them inexpensively reproduced by some firm which makes a specialty of form-letter writing. Make your letters real personal. Make them just as though you were going to receive them. Get the other fellow's point of view. You will be surprised at what this sort of follow-up will soon accomplish for you.

You can sell more trucks, trailers, automobiles and accessories. You can enlarge your territory. You can reach the prospect five, ten, or fifteen miles

away. Your garage or agency will soon be recognized as the live one of the locality. New people will patronize you. They will interest their friends. Soon you can equalize your volume of sales, so that there is NEVER a rainy day.

Don't be content with business that just drifts in. Don't you think it would pay you, as it does others, to put more steam into your selling efforts?

Remember—the postman charges you nothing for delivering your sales message, excepting the cost of the postage. WHY NOT TAKE ADVANTAGE OF YOUR OPPORTUNITIES?



National Chamber of Commerce Advocates Return Load Bureaus Urges Plan to Utilize Full Carrying Capacity of Motor Trucks in Both Directions on Their Trips

Chairman George M. Graham of the National Motor Truck Committee of the National Automobile Chamber of Commerce has launched a campaign for the extension of the "Return Loads" bureau plan. Writing from his Washington office, 8th and G streets, N. W., he has asked the help of all makers, sellers and users of motor trucks. He has made the following announcement on the subject:

In a recent bulletin the Chamber of Commerce of the United States does a signal service to the motor truck industry. It gives its hearty endorsement to the "Return Loads" plan. On the chance that you have not received a copy of this bulletin, its text is appended:

"The motor truck is a part of the transportation equipment in every community. Its use more nearly to capacity will help solve local problems.

"More complete use means loads both ways. A motor truck usually carries a

good load to its destination, whether the destination is in the same community or in another city. Too often, however, the truck makes the return trip with no load. Every time this occurs there is waste of at least half the capacity of a truck to do work in transportation.

"Owners of trucks do not wish half the earning power of their vehicles to be lost. Manufacturers and merchants with goods piled up and awaiting shipment do not like to see empty trucks pass their doors. Both need a local clearing-house for information about the trucks that are available and the shipments that are ready; i. e., to bring together loads and empty trucks.

Will Promote Co-operation.

"Such a clearing-house the local commercial organization can easily provide. It will not ordinarily entail any special expense. It will promote co-operation in the community. It will render a very real service for which business men will be thor-

oughly grateful.

"Return-Load Bureau is a convenient name for a clearing house. The bureau should ascertain the established lines of trucks that run regularly on fixed routes and the part of their capacity that is not being utilized. It should then obtain information from all owners of trucks used for private hauling, getting statements about the capacity of each truck, how far its capacity is used, between what points the capacity is unused, if the unused capacity can be made available for other persons at a reasonable price, etc. Besides gathering this information, the bureau can make known to everyone that whenever a truck is to make a trip without a load the bureau will respond to a telephone inquiry by endeavoring to give the name of a person who wants to send a load over the route in question. Efforts can be made also to have drivers who bring loads by

(Continued on page 36.)

This Garageman Understands How to Advertise Profitably

A. J. Ernst of the Castle Garage at Forest Park, Ill., Has Built Up His Business by "Persistent" and "Timely" Publicity—Handles Both Cars and Trucks

Stories of success are always interesting and the one outlined on this page—telling and showing how a garage owner in a small place made publicity serve his business—is no exception. The Castle Garage at Forest Park, Ill., a suburb of Chicago, is a busy place and A. J. Ernst, president and manager, was requested to tell our readers some of his advertising experiences.

The border of the page contains photographic reproductions of some of his advertising. His views on the subject are:

"With reference to the local advertising which I am doing in Oak Leaves and Forest Leaves, I wish to say I am having great success with it. A little over a year ago I did some advertising now and then, but it did not bring results. I suspected the reason and found I was right that spasmodic advertising did not bring the results that steady advertising does, because you have to keep right on until a car owner needs you or your service and when he does your ad must be before him or in his mind. This I figure can only be done by steady, clean cut advertising.

"I have now decided on a set amount for the expense of the advertising for the year, which I have spread equally for each month. First of all I have pushed the name Castle Garage the strongest, having had a cut made with the name, address, etc., and regardless of how I changed the advertisements the name always appears the same. This

point I have pushed until now every one within a reasonable distance knows of the Castle Garage and if in need of a garage or garage service naturally thinks of the Castle first.

"As for the class of advertisement, I have always made it a point not to do any knocking, price cutting or exaggerating, always keeping my ads clean cut and neat. As for cuts, I am using the Mershon Advertising Agency service, which includes 52 cuts, one for each week, with the necessary copy, and gives me the exclusive use of same in my territory at a cost of \$1.00 per week. Besides these cuts many are to be had from the large firms the garage man deals with.

"I also do a direct or mailing list advertising which is done for me by many of the large firms at a cost of one cent each and many times at no cost whatever. As to direct results, this was proved to me by a two-week advertisement in November, 1917. I ran an ad on accessories and according to my books the results of this was a monthly sale of accessories of \$242.15 against \$173.16 for December or \$160.00 for November.

"In my experience I have found no trouble in getting the public to come in. It is my opinion that it is then up to the garage owner to fulfill his advertisements of service by rendering the best possible, which if done he can without a doubt make a friend and steady customer out of the stranger and transient."

Who will be NEXT?
Spring is Here and Car Owners are Getting Their Cars in Shape for the Month Ahead. Will You Be Next?

We are here - but you have to take care of your own repair and supply needs. We also have the services of experienced and skilled workmen. It is just as important to have skilled attention for your car as it is to have it. We do your work and we guarantee you are not assured that it will be done right. Every job is done neatly, correctly and with the least expense possible.

Used Car Bargains
Overhauled Touring, Model 19 (A-1) \$385.00
Overhauled Touring, Model 1918 (A-1) \$385.00
Overhauled Touring, Model 1918 (A-1) \$385.00
Overhauled Touring, Model 1918 (A-1) \$385.00

Crank Case Service
We have a special service for the crank case of your car. We use a special oil and a special method of cleaning the crank case. We guarantee that your crank case will be in perfect condition when you leave it with us. We will have your car ready for the road in a short time.

Mobile Oil
We have a special service for the crank case of your car. We use a special oil and a special method of cleaning the crank case. We guarantee that your crank case will be in perfect condition when you leave it with us. We will have your car ready for the road in a short time.

EVERYTHING IN AUTOMOBILE ACCESSORIES
We have a complete line of accessories for your car. We have everything you need for your car. We have everything you need for your car. We have everything you need for your car.

THE CASTLE GARAGE
Forest Park, Ill. Phone 3389
Forest Park, Ill. Phone 3389

PLEASURE CARS
Overhauled
Telephone Forest Park 3389
A. J. Ernst, President and Manager
Forest Park, Ill. Phone 3389
7230-34 Madison Street

When a hand makes a mistake up to a service during 1917. We have the most practical car show we have ever had. We have the most practical car show we have ever had. We have the most practical car show we have ever had.

FREE WITH EACH ARABIAN
We have a special service for the crank case of your car. We use a special oil and a special method of cleaning the crank case. We guarantee that your crank case will be in perfect condition when you leave it with us. We will have your car ready for the road in a short time.

ARABIAN

Your Motor Car—

THE CASTLE GARAGE
Forest Park, Ill. Phone 3389
Forest Park, Ill. Phone 3389

STOP! LOOK! LISTEN!
Ask Anyone Who Knows
and he will direct you to this shop for all types of auto supplies and repairs.

THE CASTLE GARAGE
Forest Park, Ill. Phone 3389
Forest Park, Ill. Phone 3389

November Clearance Sale
Never before has a sale of automobile accessories and supplies been undertaken in Forest Park but we find that we are overwhelmed in a large number of items, and in order to reduce the stock we are getting extremely low prices on many of the articles. We are adding many new items to our accessory department from day to day and in order that we may have ample room we find it necessary to conduct this sale. The sale cannot be held in the far many prices that will open to you.

Winter Necessities for the Automobile Owner
We have a complete line of winter necessities for your car. We have everything you need for your car. We have everything you need for your car.

THE CASTLE GARAGE
Forest Park, Ill. Phone 3389
Forest Park, Ill. Phone 3389

GIVE THE CAR A CHANCE
A man can't do good work with his workshop full of dirt, his legs dislocated and his arm in a sling.

THE CASTLE GARAGE
Forest Park, Ill. Phone 3389
Forest Park, Ill. Phone 3389

Logical Hour for Motor Truck Due to War Time Conditions

Urgent Demands of Government and Business Make Use of Efficient Power Vehicles Necessary

It is acknowledged and agreed to by intelligent thinkers that after the war the ultimate result is "Prosperity." Prosperity is said and known to come even during the war.

Our standards for the duration of the war have been changed. Why? Because war is now the normal business of the world and any business that is in step with the war plans of the country, any commercial industry, any business enterprise, is normal, *now*. All other businesses in the eyes of the world—preferably in the eyes of the belligerents—are abnormal.

Those who insist on viewing as abnormal the conditions that confront us, will naturally find it impossible to get in line, cannot because absorbed in the whirlwind of the present time—and consequently unable to foresee clearly and to plan intelligently. But those who accept war conditions as normal will find the going more uniform and the air more clarified.

Why more prosperity during and after the war? History tells us that towns, villages, cities destroyed through war have been rebuilt, modernized and have even grown larger and prospered more quickly than was possible before the war. The destruction of a town, is after all, the destruction of several years of labor—old buildings are wiped out which otherwise would have been left standing—food, material, clothing, etc., that have been destroyed must be replaced, and modern things and methods substituted.

Homes Must Be Rebuilt.

The destroyed homes and public buildings of Europe will be rebuilt, sanitary in its newest and most up-to-date sense, with American heating and plumbing and other material. Thus it is realized that the destruction of a town, even though it appears as a

By **W. F. BLAHA**
Advertising Manager
Master Trucks, Inc.

catastrophe at the moment, is a blessing in disguise.

Cities demolished with their water and sewage systems, gas and electrical lighting plants and street railways must be rehabilitated. America will be called upon to furnish more men and more material to Europe after, than during and before the war. And that will increase prosperity here.

In reviewing the facts it is only natural for us to come to the conclusion that the only thing really destroyed by war is the result of human effort. Its very destruction results in prosperity during the war—and its replacement afterwards means more prosperity. The most difficult fact for the average person to grasp—is that war does not "use up money." On the contrary, it puts more money in circulation than is the case in peace times.

Millions of dollars—yes, billions—that in peace times lie inactive in savings accounts drawing small interest, now are doubly active—drawing 4 per cent interest on their owner's Liberty bonds, at the same time that it is being paid out by Uncle Sam in wages and materials—thus carrying prosperity to everybody. So plenty of money is the normal condition of war.

With plenty of money it is only natural that a greater portion of it will be invested in making efficient every business of today and here is where the motor truck enters its field of utility and economical efficiency. Scientific engineering, greater production and economical manufacturing have brought the motor truck down to the point where its use has become almost as general as the telephone and telegraph.

The merchant who delivers other

than by motor truck now is the exception, while the recent difficulties of the railways have required a greater use of motor trucks. In connection with the war, very few industries are of any greater service than the one which makes trucks and is responsible for so many other things like "tanks," tractors, and airplanes that are used in modern warfare.

Horses Are Scarce.

It is going to be difficult for the United States Army to get all the horses and mules it needs. Europe has combed the West and Southwest for good animals. One and one-half million horses and mules have been exported since the war began. With the need for increased production of cereals and other farm products, horses are needed badly for work in the fields. Every motor truck used by the farmer enables him to cultivate more land with his horses and every motor truck used by a manufacturer or merchant takes the place of from two to a half dozen or more horses. Every horse displaced means five more acres of land that can be devoted to raising of human food stuffs.

Keeping communication open is doubly essential, now, in war time. The motor vehicle is an important factor in this work. Telephone and telegraph operators, linemen and repair crews equipped with motor trucks do many times the work possible with any other means. Motor trucks are used for digging holes, wrecking and emergency work, erecting poles and stringing wires. Repair trucks cover longer distance and enable broken wires and poles to be repaired and communication reopened in a fraction of the time required when horse-drawn wagons are used.

The post-office department is estab-

(Continued on Page 38.)

Courage Is Vital Necessity for a Successful Salesman

Veteran Loses Chance of Big Reward for Well Planned Work from Lack of "Stick to It" Spirit

A veteran automobile salesman, identified with the sale of motor cars since the days when the majority of them were red, most of them imported and all of them very noisy, failed to collect the profit due to him because he lacked the courage to hang on. He had devised a selling plan based on his long experience in one of the great cities of this country and he took this to a smaller city where he presented his ideas to the sales manager of a big automobile distributing concern. The sales manager believed the visitor had a practical campaign mapped out and readily agreed to pay a drawing account large enough to maintain the salesman in comfort.

The idea worked out with so much care was based on long and careful study and observation of the buying habits of folks who used high priced automobiles. "Recruit," as the sales manager called him, had noticed that the majority of these men liked to talk about the cars they had owned. So the first thing he did in his new city was to look up what he termed the "automobile history" of a couple of hundred of the most prominent men in that locality.

In other words, he looked up the registration lists for several years back so that he was able to compile a sort of catalogue of well known citizens along with the names of the makes and models of cars they had owned, perhaps from the time they bought their first motor vehicle. He did another thing in his desire to be thorough, obtaining a list of members of all of the social, golf and athletic clubs in the neighborhood. He also put this data into his catalogue, then he put these names on cards with the information about each one on the back of the card and began calling on these men.

Wanted Quick Action.

It was late in winter when he started this plan, and while the sales manager was very well satisfied with conditions, the salesman soon became discouraged. It had been his experience in the city where he learned the business that it was often possible to sell a car during the first interview, or lacking this speedy action, to obtain an order a few days later.

The sales manager became more enthusiastic over the idea of his Recruit as time went along. He had good reasons for this. A good many of the men whom Recruit visited in his campaign belonged to clubs of which the sales manager was also a member, or met him at social gatherings or theaters. A number of these men made some mention of the fact that Recruit had called upon them. Several of them said they had quite interesting talks with him concerning some of their early cars. To a man they had evidently been impressed by Recruit and when the sales manager thought about this he realized that it was the working out of the plan that had made the favorable impression. Recruit to be sure was a nice chap, agreeable, well educated but by no means fortunate enough to be the possessor of one of these rare personalities that win friends at sight.

"Why," mused the sales manager to himself, "to a lot of these chaps this talk about their old cars must be the same to them as yarns about the old swimming hole or the neighboring farmers' orchards, are to men raised in the country. Recruit knows about these old cars, he sold a lot of them, has helped fix a good many of them, and drove most of them. He could tell about how the steering of some 1903 model was awful cranky at certain speeds, or the fact that the

old Buckmobile might well have been named the 'Bronco' because of its propensity to imitate the antics of one of those lively little horses.

Used Subtle Flattery.

"Recruit could also use some very subtle flattery on some of these chaps around here by telling them of famous figures in national politics, finance and business who had owned cars just like those driven by our own neighbor. He could reveal some of the experiences that scores of these famous owners had with these old cars, and provide some of these local men with yarns for retelling at the nineteenth hole, beginning thus:

"That old Rover I had in 1902 had the same trick about refusing to start as the one owned by Harry Payne Whitney. I heard the other day from a man who knows Mr. Whitney that he had the same trouble I used to have. When I asked how he fixed it I found he had hit on the same solution of his difficulty as I had."

"That sort of work will make Recruit a big winner for me. That kind of salesmanship gets under the skins of prospects for high priced cars better than most anything that I can think of or I have ever heard of being tried."

Recruit worked along for about three months and had not made an actual sale. He became greatly disheartened. Foolishly enough he was too stiff necked to go and talk things over with the sales manager. Instead of this he made up his mind one day that he would return to his home city. He was disgusted at what looked to him like his lack of success. If he had asked the sales manager the latter would have told him to stick to his job because he was doing fine. To be sure, the sales manager knew some-

(Continued on page 29.)

All Must Buy Liberty Bonds, Writes Koether in Quieterion

Rear-Admiral Samuel McGowen Doubles His Subscription After Reading Eloquent Appeal of Detroitier

Of all the arguments favoring the universal purchase of Liberty Bonds—and there have been many—one of the best is that written by B. G. Koether, sales chief of the Hyatt Roller Bearing Company at Detroit. It was published in the "Quieterion" and concerning it Rear Admiral Samuel McGowen, Paymaster General of the Navy, wrote to Mr. Koether:

"The message in your little publication, the 'Quieterion,' is the most appealing and withal the strongest and most convincing presentation of the Liberty Loan situation that has come to my attention. I want you to know that it hit the mark, for immediately upon reading it I went out and increased my subscription to the loan by 50 per cent. I hope that it will have a like effect on every one who sees it."

Mr. Koether's article is given below.

This is a special message for you. A message that must come home to you in a bigger way than any message has or ever will. It is a message to every man in this country. Right now you are probably sitting at your desk in your office. Not many hours ago you said good-bye to your wife and to your kiddies; you felt Her arms about your neck and Her warm kiss upon your lips. You kissed the kiddies, gave Her a last hug and hurried for the car.

On your way down, you looked over the morning paper. Perhaps you talked with a neighbor. If you did, it was probably about the war, and you both agreed that it is a horrible thing.

Our Lives Are Quiet.

Again, you'll feel Her arms about your neck; and you'll hear the kiddies upstairs getting ready for supper and you'll call up to them a cheery "Hello." You'll eat dinner in the quiet of your home, with your whole family about you. You'll romp with the youngsters, and then when they are off to bed you'll sit down to your paper or a book or a game of bridge. And while you have been doing all this, leading your quiet, every-day life, other men have been going through Hell.

And through Hell, for you and yours.

Other men have lived these hours in dirty, foul, damp trenches, the stink of which would make you—if suddenly thrown into their lives—vomit the food from your stomach.

And they have been doing this for you and yours.

Other men have left their hangars, have

gone up into the sky, out over the enemy's lines, that they might learn something of his position. And these men have given no thought to the fact that that day might count them as missing, machine gun fire from an enemy plane having sent them crashing to earth, now a living, breathing man, and now nothing but seared flesh and broken bones.

And these men have done these things for you and yours.

Others Go "Over the Top."

Other men have charged "over the top," many only to go a few yards, when a breaking shell tears them apart. And other men have climbed down into the enemy's trench, there to fall wounded and dying.

And these men have done these things for you and yours.

To protect that home of yours and the loved ones that are so dear to you.

In the car coming down this morning, you said this war was a horrible thing. And you said it as if it were something with which you had nothing to do—something that could never affect you. Something not half as real to you as that awful nightmare that woke you, cold and trembling.

Don't fool yourself; this is your war. This was your war when the Lusitania was sunk.

It was your war when the first Belgian fell to the ground, murdered. It was your war then, and it's your war now. And you have got to do your bit!

If you would hear the thunder of hostile guns at our seaports, if you would see our cities in flames and millions of our soldiers heating back the German flood upon our shores, if you would see our women and our children abused and tortured—the same dear woman and the same dear children that you kissed good-bye to a few hours ago—if you would see in this country, your country, a repetition of Rheims, Lille and Louvain, if you would see these things, then just sit supinely back in contentment, feeling secure that the other fellow will take care of you and yours.

Don't fool yourself. This is your war and you've got to do your bit!

It's more than a war for democracy—it's a war for humanity. It's a war to make your home, your wife and your children safe. It's a war to protect them from unbelievable rapacity and unbelievable ferocity.

Perhaps you can't enlist and perhaps you can't train at an officers' camp—but you can do your bit.

Country Must Have Money.

This country must have money. The war is costing and will continue to cost, millions of dollars every day.

And this country, your country, wants your help.

You have now, on your desk, a letter to answer, an order to enter. Possibly men are waiting to see you. Before you touch a paper or see a man, go to your bank and do your bit.

Subscribe to a Liberty Loan Bond.

Do it now—right away.

Other matters, never mind how important, are nothing as compared to this. And don't think that the other fellow is going to do it all. Don't think that Wall Street and a few in the big cities are going to do it all. The wealth of the masses is greater than the reserve of the banks.

It's up to you and up to me. If you are an employer of men, arrange so that every man will take at least one Liberty Bond. If you are an office boy, go to the bank and do your bit.

Every Liberty Bond you buy will equip a soldier; buy him a rifle, a bayonet, a scabbard, cartridge belt, one hundred cartridges, gas mask and trench tool.

Every Liberty Bond you buy sends one hundred bullets singing over No Man's Land.

Every Liberty Bond you buy helps to send the Kaiser, and all that he stands for, to everlasting Hell.

Do your bit. Do it today.

Buy a Liberty Bond.



IN THE SERVICE OF OUR COUNTRY.

Eugene Silver, formerly a member of the Cole distributing organization of E. C. Fray at Chicago, is now a lieutenant in the United States aviation corps.

A. C. Webb, former branch manager of the Studebaker Corporation at Atlanta, Ga., reported to have joined the sales forces of the Fulton Motor Truck Company, of Farmingdale, Long Island, found after taking this step that he had been commissioned a captain in the Ordnance Department, and William Fulton Melhuish, Jr., president of the company, willingly released him from his promise. Mr. Webb will take up his duties with the Fulton company at the close of the war, no matter what that time may be.

The Industry, Men—the Editor

Removal Notice

The American Garage & Auto Dealer announces the removal of its general offices from the Monadnock Block to 116 S. Michigan Avenue, Lake View Building, Chicago, Illinois, where, at any time, it will be pleased to welcome and receive its friends and customers.

Organize Return-Load Bureaus for Trucks

Having the backing of government officials as well as the enthusiastic support of the National Automobile Chamber of Commerce, there is every reason why all the motor tradesmen in the country should do everything in their power to further the growth and usefulness of motor truck "return load" bureaus. Now, more than at any other time in the history of American business, any plan that will facilitate and hasten the rapid and economical delivery of goods should be pushed by all loyal and patriotic citizens.

Motor tradesmen, because of their knowledge of motor trucks and their wide acquaintance with the owners and operators of these vehicles, are best fitted to take a hand at the organization of "return load" bureaus. While perhaps the ideal way of handling these would be through the authorities of a board of trade or chamber of commerce, a good deal of preliminary organization work as well as the laying out of plans for conducting them can be best done by automobile men.

In cities where there is no board of trade or chamber of commerce the local organization of motor tradesmen should take up this matter and organize bureaus for their own localities. Lack of a formal organization of the members of the automobile trade in any particular municipality need be no bar to the idea, for two or three motor tradesmen could very well pool their experiences and knowledge and start a bureau themselves.

It is not only a good thing for automobile men to do in a civic and patriotic sense but it has great possibilities of paying big dividends to them in a business way. It is certain that if the plan is well carried out it will not only please the customers who have already bought trucks from them, but it will result in proving to many prospective purchasers that motor trucks are a vital necessity to any business which produces merchandise of any sort that must be transported in bulky packages.

Interference With "Drive-Aways"

Trouble encountered by employes of dealers in different parts of the country who were held up by local authorities because the cars they were driving did not bear State license plates, furnishes a good argument for the federal license plan that has been advocated by the American Automobile Association. While it is a fact that the National Association of Automobile Dealers has succeeded in ending these annoyances in several cases the fact remains that some plan should be adopted that would prevent anything of this sort happening again. About the only way that this can be done in a definite and positive way will be through some system of license plates that will have the backing of the federal government.

There is every indication that the "drive-away" method of getting motor vehicles from their place of production to the point of distribution will increase rather than decrease. It seems quite certain that there is very little chance that the condition of the railroads will improve sufficiently so that motor vehicles can be transported in freight cars to the same extent that has been possible in the past, especially as it seems quite likely that the demand upon the railroads for freight cars to move war supplies of different kinds is quite certain to increase rather than decrease.

It is strange that the greater proportion of trucks at least have not been delivered by being driven over the highways because in a majority of cases less time would elapse from the date that the vehicles would leave the factory and the day when they would arrive at the distributing point. To a great extent the delivery of business motor vehicles by highways is a patriotic duty which the makers and the sellers should be willing to perform. If this plan were generally carried out the number of freight cars that would be released for other uses would surely help greatly to relieve, and perhaps prevent, or certainly lessen freight congestion at the larger cities.

Sell More Accessories

Faced by the certainty that they will not have the chance to make as much money as usual in the next few months on the sales of new cars—due to the curtailment of production owing to the demands for the government for munition manufacture—automobile dealers must make more sales of other kinds of merchandise, and increased business in accessories is the best solution of their problem. Because of the lack of profits from sales of new cars live motor tradesmen must turn their efforts to increase their turn over of accessories. Thousands

of men and women all over the country who would buy new cars under normal condition must be content to use their old vehicles. But having some surplus money which they had intended to devote to the purchase of 1918 models, they will be the very best kind of prospects for new tops, or windshields, tires, demountable rims, carburetors, and the scores of other fittings that make the use of motor cars more enjoyable and comfortable.

A great deal of work has been done by the manufacturers of accessories in preparing motorists for the sales efforts of dealers. The great sums that have been spent in general advertising by accessory firms have done much to arouse the buying instinct in the minds of car owners. If the dealers will get after automobile users in their territories, telling them that they have good accessories for sale, much business will result. Manufacturers and jobbers will be glad to help the dealer prepare his newspaper or direct-by-mail advertising campaign to sell accessories. No dealer need hesitate to ask the assistance of either a maker or a jobber because his initial order is for a small amount of goods. The jobbers especially will be very glad to help the dealer every way possible, for that way they can help develop their own sales total by assisting the retailer to increase his volume of accessory business.

Put Business on Cash Basis

Putting business on a cash basis is something that should be done, in so far as it is possible, by every motor tradesman. While it may not be possible to conduct garage storage service on a cash basis the operators of garages will undoubtedly benefit if they will agree among themselves locally not to let bills run longer than a month at a time. The charges for service, general repairs and adjustments have been put on a cash basis by the best motor tradesmen all over the country, and this should be followed by every one else in the business.

The constant agitation for lien laws in different states of the country, which has taken so much time and attention, need not be kept up if the dealers insist on getting cash for repairs before they deliver cars to owners. Another feature of the cash basis idea is that there is a feeling on the part of some people that the men who go to war should be released from the necessity of paying their debts until the Kaiser has been beaten, which may take several years. If the dealers will not take the chance of extending credit to any one they will thus be saved the embarrassment of waiting several years for money if a moratorium should be put in effect by Congress.

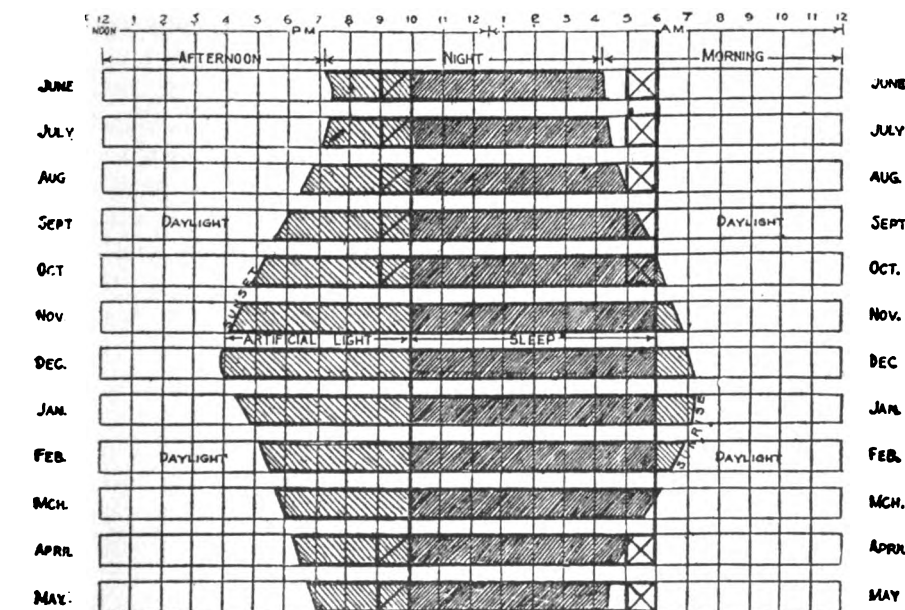
How the Daylight Saving Plan Works

Prescott Sales Manager for Disco Electric Firm

The Disco Electric Manufacturing Company, of Detroit, makers of Disco electric lighting and starting systems, announces the appointment of Harry F. Prescott as sales manager. Starting with an excellent technical education, his work during the past fifteen years has varied from engine room service at sea, to district sales manager of the Saxon Motor Car Company.



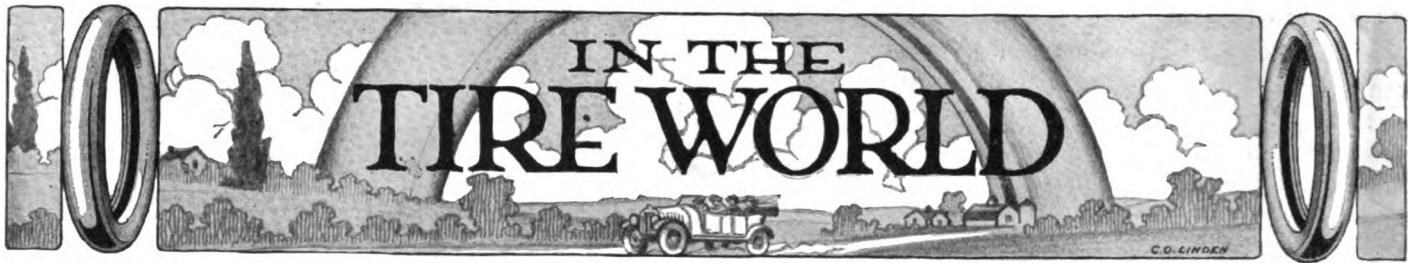
Harry F. Prescott.



The hours of daylight redeemed from sleep under the daylight saving plan that went into effect March 31 are shown by the sign X in the above chart prepared by the New York Herald. The additional hours in which artificial light was used

that have been added to the sleeping time are indicated by the sign /. The heavily shaded portion indicates the time of darkness used for sleep. The lighter shaded space shows the periods in which artificial light is required.

Mr. Prescott has held important positions with the Bullard Machine Tool Company and the Locomobile Company. He spent five years in sales work and in studying foreign market conditions in South America. He leaves the Saxon sales department to take up his new work at an opportune time, as the Disco Company is starting an aggressive sales campaign.



Winning Retail Tire Laurels in America's Rubber Capital

By C. S. NORRIS
Akron Service Station Manager
Miller Rubber Company

Before going into the detailed merchandising plans with which this little story has to do, the writer wishes to emphasize above all things else the importance of confidence—confidence in one's house and in one's product. It is worth more than any salesman that ever lived, more than any sales idea ever conceived. Now for the story.

Beginnings of Plan No. 1.

It was in April, 1911, that the writer took charge of the Tire Repair, City Sales and Adjusting departments of the Miller Rubber Company. Previous to that time this work has been in charge of a young man who, unfortunately, had very little experience—either in tire sales or tire repair. Owing to the bad impressions he had made on all our customers, it was necessary to inform them at once of the change of management and, in addition, spend considerable money in the newspapers on initial advertising. In these advertisements we naturally featured the change of management but also emphasized twenty-four-hour service on all repairs and our offer to deliver a tire or tube anywhere within the city limits without extra charge.

After two agonizing weeks of waiting for replies to those advertisements, there finally came a customer. This man had several tread cuts in a casing, and wanted them repaired before any serious trouble set in. The tire was brought to our place in the

Plans Used During Station's History

- 1—Selling from store entirely.
- 2—Selling from store with aid of service cars.
- 3—Selling from store with aid of salesmen only.
- 4—Selling from store with aid of both salesmen and service cars.

middle of the afternoon. Here was a chance to demonstrate that our advertising had not been mere idle talk and to show that we were really there to give service. So the writer had the customer wait while we repaired his casing and put it back on the rim.

Quick Work Wins Friends.

Needless to say, this motorist was very much pleased with this unusual service and quite naturally told his friends. The work then started to pick up considerably and every customer that we handled widened the circulation of this valuable word-of-mouth advertising.

So rapid was the resulting growth that in July of that year we were forced to put on an additional man to take care of the quick repairs. Another man was added in August. Before the summer was over we had added still another man to our force. By working this force evenings and Sundays we were able to keep up with our work until the winter months brought relief.

We always made it a rule not to promise a tire to a customer at a certain time unless we were absolutely certain of having that tire ready when the customer called. We found by

experience that a broken promise results every time in shattered confidence and usually the loss of the customer. And, undoubtedly, one of the most important factors in our increase of business that summer, was the fact that when a tire was promised to a customer at a certain time, that tire was ready when promised, 99 times out of a hundred.

Another important factor is the hours of opening and closing. If your hours are from 7:30 in the morning until 9:00 at night, see that you are open and ready to do business *every moment* during those hours. There is nothing more disappointing to a customer than to drive up at 7:30 in the morning, expecting to find your doors open but having to wait thirty minutes for attention to his wants. Tardiness in beginning your business day will result in loss of business just as surely as poor service and poor repairs will. And be on the job yourself. Hire a boy to run your errands, but look after the wants of the customer personally.

This policy with our quick repairs was followed the next year on practically the same basis, and we found that our business increased fully 100 per cent.

The Inception of the Service Idea.

Quite frequently, we received calls from customers asking that we make repairs or deliver new casings and tubes to them while on the road, wherever they might be in difficulty. Naturally, in these emergencies, we always tried to effect deliveries as quickly as possible. Sometimes it was even necessary to borrow the manager's or the superintendent's car in order to do this, as we then had no special service car.

Once given this service, the customers called for it oftener. In order to take care of these requests, it soon became necessary to purchase a motorcycle with a side-car. The service was appreciated and developed into a paying proposition. In the spring of 1913 we purchased another motorcycle and free service anywhere within the city limits was advertised. Before the summer was through, it was necessary to add two more motorcycles to our equipment, making four in all.

Previous to starting this service, the best months we had ran about \$3,500 in sales. But during the first year of free service the sales volume showed an increase of 400 per cent. And every year since then up to the present writing, our sales have more than tripled.

Gaining Customers' Confidence.

Aside from good work and good service, we find that gaining—and retaining—the confidence of our customers was the biggest factor in our success. The winning of this confidence was due to the fact that the manager himself was very seldom absent from the station during our working hours. His personal attention to customers was possible at all times. And any advice given a customer was prompted by long years of experience in the tire business. Moreover, it was sincerely given with the object of safe-guarding the motorist's interests. No unnecessary expenditure was advised unless the circumstances actually warranted it. Never was a man advised to use an over-size tire—which called for an extra outlay of money—unless his car really needed over-size tires.

Now there is usually a reason for

a motorist's changing from one tire to another. He has either had trouble with the tires themselves or he has failed to receive good service. Therefore, the first thing we do when a new customer comes is to find out just what has caused this man to change over to our product. If he hasn't received good mileage from his tires, we try to ascertain *why he didn't* receive good mileage.

The writer remembers very distinctly the case of a doctor who called on us, stating that he had read our ad and would like to know why he was not getting good mileage. He was using competitors' tires and had never received more than 800 or 900 miles from any tire used that year, and he had probably used ten or twelve tires. The writer walked out to the doctor's car and found that it was an old model that he had had for six or seven years. The rims were very old and rusty and worn so badly that no tire used on them could possibly give good service.

The entire cause of the trouble was explained to the doctor and he immediately wondered why he hadn't been given this kind of advice by our competitors. He had undoubtedly purchased eight or ten sets of tires from them, yet they had never once looked at his rims.

New Rims Stopped Trouble.

We had a new set of rims applied to the car, and it was used by this doctor for two years without any further similar trouble. Had we jumped at the chance of selling the doctor two new tires without ascertaining what had caused his past trouble, he would shortly have experienced the same difficulty with our own product and immediately discontinued its use. But instead, he is still buying tires from us and is a life-long friend.

Another instance of this nature occurred with a piano dealer who had always experienced trouble with his tires. At first, we were rather puzzled as to just what was causing the trouble. But after carefully weighing the car, we found that it was one of those cars built all out of proportion to the tires placed on it by the manufacturer. Moreover, the tires

were of an odd size and could not be over-sized.

Therefore, instead of selling him and repeatedly making adjustments on his tires, we told him frankly that no one could make a tire that would stand up on that car. We urged him to try some other tire in order to convince himself that it was not the tires' fault, but the car's. Instead of this, the customer was impressed that we were telling him the truth. He traded in the old car and got a new one, equipped with 32x4 casings. The first set of tires on this car gave over 5,000 miles of service without any trouble whatever. This man is one of the biggest boosters we have.

Therefore, we believe very strongly that it is good policy never to sell a man tires without the absolute certainty that they will give satisfaction. Selling a customer satisfaction pays the biggest dividends in the long run.

Expansion of the Service Idea.

By the beginning of 1918 the original lone motorcycle service car had been supplanted by a fleet of sixteen fast automobiles, operating 24 hours a day. But, owing to our location in the extreme south end of town, a needlessly large amount of gasoline and time was consumed in making trips to the west and east ends. It occurred to the writer that we could cut out at least two service cars by establishing a west-end branch, for fully 15 per cent of our calls came from that neighborhood. We rented a small building, equipped it with a small stock of tires, a gasoline dispensing outfit and a few accessories, and placed a man in charge.

We found that two service cars stationed at this strategic point would take care of as much work as four cars operating from the central station. Hence a saving was effected of \$150.00 a month in operating expenses for two cars, without even considering the eliminated depreciation.

The west end service station proved such a success that we are opening a station in the east end, and we expected by this move to free two other cars.

Therefore, by putting in the two sub-stations, at a cost of about \$100

(Continued on page 38.)

How to Make the Shop Pay

Effort Is Planned for Obtaining United Action to Limit Free Service in Repair and Adjustment Work for Car Buyers

By E. B. HINRICHSSEN

Bill expressed himself like this:

"I don't know whether I ought to butt in or not. Mr. Brown seems able to hold up my end of the argument better than I could, but the way things have turned out, I believe I am better able to point a way out than any one here. You all seem to be agreed on the fact that free service is necessary to a certain extent and that the sales department should not be compelled to pay the shop retail prices for doing the work. The first thing you have to decide is how much service shall be sold with a car and the next is who shall pay for it.

"In regard to paying for it, I can only say that the shop is going to be paid for every motion it goes through. All of Mr. Brown's work is useless unless we apply his methods everywhere. I don't mind making a contract for so much per car for a certain length of time, but I repeat the work must be paid for in some way.

"The shop is charged for heat, light, salaries and other expense and for the first time in its history is paying a profit. We get the profit over a certain amount to be distributed as a bonus. Now I want that bonus to be as big as it can be made.

"You expect to make more sales this year than ever before. That means, under the old system, that half the force will be busy teaching, repairing and adjusting right in the shop's busiest time. That won't do. It is going to cut the dickens out of my profits. It don't pay to pull a man off a job and set him to tuning up a new car the instant a salesman closes a deal. I have a rough idea that might be worked out and you can have it for what it is worth.

Have Guarantee Understood.

"We have big storage capacity for new cars. I understood Mr. Wilton to say that deliveries of next year's models will soon begin and that he expected to carry a good many cars on hand to meet the demand without delays. Suppose you agree on the amount of free service you will give with each car and have the guarantee understood.

"Then make a contract with the shop to furnish that service either at a flat rate per car or on a time and material basis. The shop will unload, clean, tune and store the cars until they are sold. We will get the cars in perfect running condition, not just unload and store them until sold.

"We will keep enough cars ready for delivery at all times to meet the demand and

won't have to drop something else on a moment's notice to tune up a car for a customer who is in a hurry. That is, we can do this if Mr. Wilton carries the stock he intends to. I think we can agree on a figure that will suit us all. After all, it costs the concern just the same one way as the other and the only difference is that we have more time to do the work and that the shop gets credit for its work.

"The sales department says we have to give free service because all the other dealers are doing it. Now, believe me, the other dealers are just as sick of it as you are. I get around a good deal among the shops. We are always borrowing or lending stuff to one another, and the shop men run pretty much together after work.

"They all talk more or less about what is going on where they work and know more about the affairs of the office than you would think. I have picked up a lot of information about this thing and know how the other folks feel about it. Out of ten or twelve concerns in the town, we are the biggest. I believe that a service agreement could be reached that would suit them, and if they all stick to it, for it will be to their advantage to do so, we will do away with one of the big curses of the business.

Try to Outdo Others.

"The way it is now, they all seem to be trying to outdo the others in the amount of free service and accessories they give with cars. A prospect tells a salesman what the other fellow will give him and the salesman agrees to do as well and maybe a little better. I am only talking about what you give with the car. I don't know anything about whether you cut prices or not. It is none of my business.

"I think that if Mr. Wilton will talk to the other managers he will find them ready to meet him half way. If they can agree on how much service to give with a car and will stick to it, I am ready to submit a

figure on what I can supply that service for.

"As to the accessories, I have to say that the accessory man has been mighty nice to us about letting us have goods we have sold at a discount. I want to tell him, though, that whenever we have sold an accessory that took time to install, we have always added enough to the price to pay for the time and have told the customer what the extra charge was for. I never had one kick yet.

"Sometimes a man buys something and wants to put it on himself, but that is not kicking on paying for the work. Lots of folks like to tinker with their cars. When we sell a tire, we usually put it on, but the profit on the sale pays for this and it don't take a high-priced man anyway. I am willing to make a flat price for installing any of his accessories and I don't think he will lose any business if he sells that way.

"Maybe I don't express just what I mean, but Mr. Wilton told me to speak up if I had any scheme that looked good to me, and I think you get my idea. Probably you can refine it some and perhaps make it work into something. At any rate, it ought to be worth trying."

"Bill," said Mr. Wilton, "the idea is good and we will at least see what can be done. I'll get the heads of the other concerns together and we will talk it over. We are all good personal friends and ought to be able to determine on a plan.

"The whole thing hinges on whether we can agree on how long we shall maintain a new car. In the meantime you and the accessory man must come to an understanding and get your rates fixed up. We can try that part of your scheme anyway. I think we had better call it a night's work now and get to bed. Look out, Bill, that the sales force don't sandbag you on the way home."

With the laugh that followed this, the meeting broke up.

One of the liveliest wires in the automobile trade has suggested that every man has a few pet expressions that help him over a rough spot. For instance, when he meets some one who is a little more pessimistic than usual the live wire says to the other fellow:

"When you are down at the mouth, remember Jonah—he came out all right."

Send us three of your best axioms, the ones you like best.

We want to get acquainted with you and you get acquainted with us.

What Was Your Best Advertisement?

\$50 in Cash Prizes to Be Awarded to Automobile Dealers and Garagemen—Contest Closes August 1, 1918

EVERY now or then some automobile dealer or garageman hits upon a lucky piece of advertising copy which has proved to have "punch" and "pulling power." The size of the space may not have been large, but possibly it is the way in which the space was used. Often a good type layout may be the cause of the effectiveness of the advertisement or possibly a good illustration may have turned the trick. But whatever it is, the editor of the American Garage & Auto Dealer is anxious to find out.

You may win a prize if you will help.

You are an advertiser! What has been your experience? Do you advertise in your local papers? What kind of advertising do you do? How large a space do you carry? Do you change your copy frequently or do you use a standing advertisement?

What was your best advertisement this year, last year, or in fact in any previous year? Mail it to the Contest Department of the American Garage & Auto Dealer. Mark plainly thereon when and where it appeared. Also be particular to state just what it "pulled" in sales—in actual dollars and cents. Specify exactly.

Cash prizes of \$25, \$15 and \$10 will be awarded respectively for the three advertisements selected by the judges from among those to be submitted which actually produced the "largest volume of sales" or business for accessories, tractors, trucks, trailers or passenger cars. Get busy at once. The contest closes August 1, 1918, and the winners of the prizes will be announced in the September issue of the American Garage & Auto Dealer.

Will YOU be the lucky winner? It's up to you. Produce that advertisement. Address your reply to Adv. Contest Department, American Ga-

**\$50 in
cash prizes**

**\$25 - First prize
\$15 - Second prize
\$10 - Third prize**

**Are you going to win one
of these rewards?**

rage & Auto Dealer, 116 S. Michigan avenue, Chicago, Illinois.

**Courage Is Vital Necessity
For a Successful Salesman**
(Continued from Page 22.)
thing about the immediate future that was a dead secret to Recruit.

Left Without a Word.

Without stopping to tell anybody why he was going Recruit went away from there and returned home. Being a conscientious person he left behind him his catalogue and data about prospects, and his cards with the reports of the visits he had made to these men. He simply left a brief note to the sales manager announcing he had resigned and had gone home. When he had gone the sales manager, of course, put another man at work on Recruit's prospect list.

Ten days after Recruit had gone the distributor received a new model which differed somewhat materially from its predecessor and the car was a dandy. Recruit's successor started in to show this car to the prospects he had inherited and inside of the next two months earned in commissions more than \$3,000. All he had done

to earn this money was to carry out the plan devised with so much care by Recruit. To use a simile much in vogue at present: "Recruit had plowed and prepared the ground, and sowed the seed, kept the field free of weeds"—but his successor reaped the harvest.

Courage is certainly a vital necessity if one has any hope of succeeding in the selling of automobiles or any other kind of merchandise.

Detterich New 'Ad' Chief in Bearings Service Firm

General Manager A. K. Hebner of the Bearings Service Company announces that H. J. Detterich assumed the duties of advertising manager of his company April 15.

Mr. Detterich leaves the Paige-Detroit Motor Car Company, where he has held



H. J. Detterich.

the position of assistant advertising manager for the past two years. Previous to this he was connected with the advertising department of the Studebaker Corporation.

"In having Mr. Detterich come with our company," said Mr. Hebner, "we feel that we have a man who is exceptionally well fitted to fill this new position in our organization which it has been necessary to create in order to have an executive who can devote all his time to the large volume of advertising incident to a company which has twenty-two branches and more than five hundred distributors."

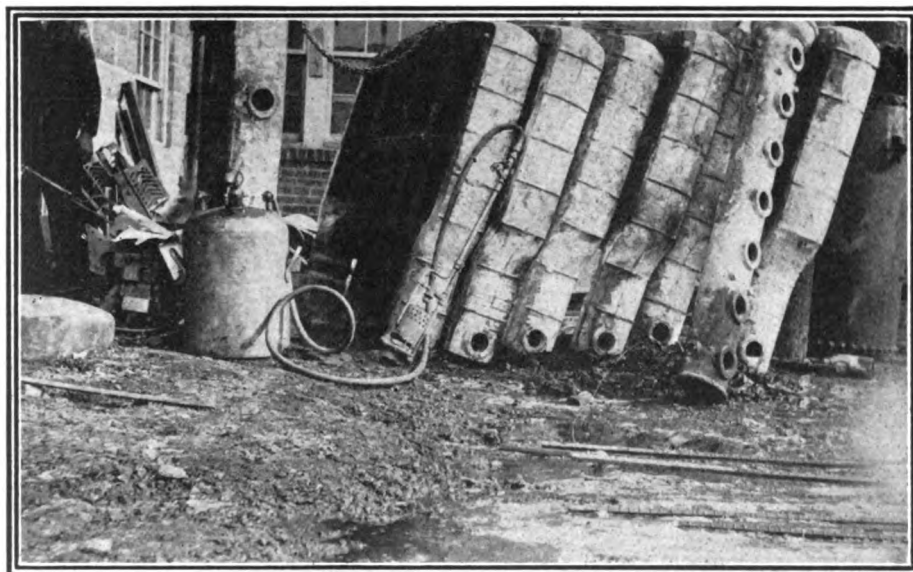
Welding, Cutting and Brazing

Welding Furnace Sections

By David Baxter.

The number one picture shows a fair sized job of welding done with the oxy-acetylene torch. The job consisted of seven sections and the manifold of a schoolhouse furnace which had been allowed to freeze up during a cold spell. The freezing resulted in both legs of each section being cracked. The cracks were twelve to sixteen inches long. The manifold was also badly cracked; the dark spots show where it was welded.

The picture was taken after the entire job was welded and tested, under city water pressure. A leak developed in the section shown at the left, which had to be welded over again. The arrangement made for preheating is also shown. This consisted of a makeshift oven built of firebrick. The preheating was accomplished with one burner of a flaming torch kerosene heater. The idle burner leans against the first two sections. The flame of the other burner is being directed by a helper.



Picture No. 1.

Furnace sections are considered by many welders a difficult job to weld. But if they are properly preheated and cooled after welding they are comparatively easy. By employing a little ingenuity together with the following instructions almost any welder should be able to do successful furnace work.

First, get each section ready to weld before lighting the torch. With a diamond-point chisel cut a V or groove the full length of the cracks. Make it the full depth of the metal thickness and of a width

at the top corresponding with the metal thickness. Clean a strip a couple of inches wide along each side of the crack with a file or wire brush.

Now lay the section down on the floor with the cracks upward. Build a brick furnace around each leg to confine the preheating. Preheat one leg and weld it before preheating the other. Then while the first leg is cooling, preheat and weld the other leg.

By going in turn from one leg to the other the job is made continuous; while one leg is cooling the next is being preheated. This method will be found to be a great time saver.

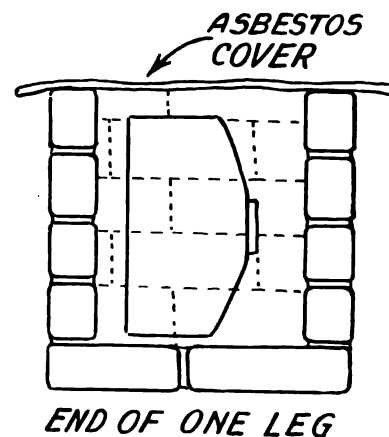
Picture number two shows the arrangement of the brick oven and the preheating flame, also the location of the crack.

After the crack is grooved and the legs are bricked up, light the oil-burner and place it as shown in the sketch. Arrange to have the flame envelop the entire end of the leg. The preheating flame should burn until the leg for a space of eight or ten inches beyond the end of the crack is red hot.

While the preheating is under way se-

of the crack and worked downward toward the base end.

First a spot about an inch long in the groove was brought to the melting point. Then a half or three quarters of an inch



Preheating Brick Furnace.

of the rod was melted by passing the flame quickly up and down while holding the rod in contact with the melting weld. The flame was then manipulated back and forth so as to cause the end of the filler and the part of the weld to reach the fluid stage at the same instant.

The melted spot was then puddled with the rod for a moment, meanwhile the flame was kept in motion over it. Just as soon as the new metal and that of the groove were thoroughly melted and mixed, the molten end of the filler was dipped in the flux and the operation repeated. This operation was repeated to the end of the crack. The pressure of the flame was utilized throughout the welding to blow the metal about in order to lend a smoother appearing finish to the weld. A brush-like motion was employed to accomplish this effect.

When the entire length of the crack was welded, the preheating flame was allowed to burn a while to bring up heat to a red hot again. The heated castings sometimes cool considerably during the welding, especially the first part to be welded. This raising of the heat was done to cause the entire leg to cool evenly, and to start cooling all the same time. This causes the contraction to act normally.

This is the particular part of the welding; the regulating of the expansion and contraction. The casting must be preheated sufficiently to prevent a sudden expanding of the metal when the welding flame is first applied. Remember, the white cone has a temperature of over 6,000 degrees. Then the job must start cooling alike and at the same time. That is, all parts must be heated the same when the



There's a Harvey Jobber Near You

THE superiority of Harvey Springs has been so well proven by actual experience that there is no longer any question in the minds of garagemen and car owners as to their pre-eminence in strength, resiliency, endurance and all 'round dependability.

Service — Founded on Quality

Having built a Spring of such well established merit, a Spring that has won the respect and support of the entire motor world, it was for Harvey thoroughness to back up this Spring with a service as good as the Spring itself.

Over 900 Styles Always in Stock

In every state in the Union, there is a Harvey Jobber with a large stock of Harvey Springs always on hand. It is his business to see to it that your order is filled and shipped by the fastest route whenever you call on him for help.

THERE'S A HARVEY JOBBER NEAR YOU—Drop us a card and we will send you his name and our Spring Book giving measurements, weights, and sizes of over 900 different styles of Springs and other valuable information that you should have. Write today—you may need Harvey Help tomorrow.

Harvey Spring & Forging Co.

922 17th Street Racine, Wis.

cooling starts. And the cooling should be slow and natural. No cold blasts of air should strike the welded part. To insure against this the weld and the brick oven should be entirely covered with pieces of asbestos paper before the preheating flame is cut off.

As soon as the heat is back again to red,

all out of the melted metal before leaving the weld.

Sometimes the weld will crack back. In this case it is necessary to re-weld the entire crack, using greater care to regulate the heat. Remember to work rapidly, keeping the torch constantly in motion, revolving in tiny circles either to the right or

foot and one-eighth of an inch wide. When the metal is melted it occupies a certain space and when it cools it contracts a certain percent.

Causes of Torches Backfiring

Question—What causes my torch to go out and make those sharp cracking noises?

—Harry L., Kansas.

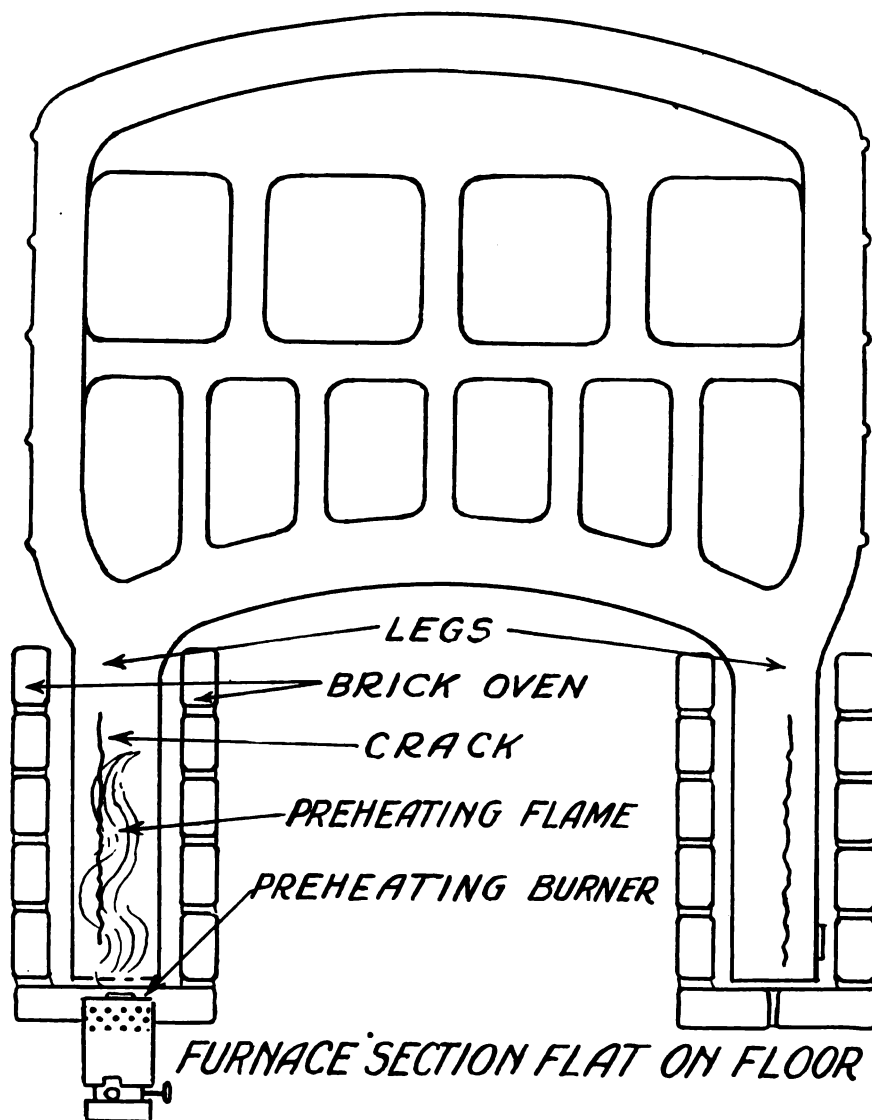
Answer—Several things may cause this. The oxygen is turned on too strong or suddenly. The tip is allowed to become overheated or the tip may become obstructed by a bit of slag or melted metal. When the pressure is too strong for the tip size it will blow out the flame. When the tip is allowed to get too hot from too close contact to the weld or from too continued work the gases take fire in the mixing chamber instead of at the tip end.

This is called backfiring, which is in reality pre-ignition in the torch head. It is not particularly dangerous if the torch is of standard make by a responsible firm. When the tip becomes choked up the gases do not mix right and usually blow out the flame, causing a sharp whistling noise. The remedy in the first case is to cut down the oxygen supply. The next is to shut off both the acetylene and oxygen and cool the tip in water. Then be careful not to work the tip too long where the heat is confined. A clogged tip is usually caused by allowing it to touch the melted weld.

Cutting Cast Iron

Question—I have been a subscriber to your valuable paper for some time and get lots of valuable information from it. I am particularly interested in the welding department. Sometimes I am vexed with welding problems, and wish I had some one to turn to. This time I am going to trouble you. I have some cast iron plates that I wish to shorten without taking them to a machine shop. Can this be done with the welding outfit? I understand that steel and wrought iron are the only metals that can be cut with the torch.—A. B. C., Ala.

Answer—Strictly speaking, cast iron cannot be cut with the torch. But there is a method of using the torch, although it is slow and tedious. First cut a groove along the place to be cut. Then use a large size tip and melt the iron along the groove and scrape it out with a spatula. One must necessarily work slowly and change scrapers frequently. Do not try to melt over an inch at a time. Endeavor to have the heat working outward toward the end to be cut off. This tends to produce a smoother job. At best it is not possible to do a nice clean cut, but it may answer the purpose in extreme cases. It is much too expensive for everyday use. Lugs, flanges, bosses, etc., may be removed in this way by exercising a little ingenuity.



Picture Number 2.

the preheating device is removed and put in position at the other leg. The second leg is treated in the same manner as the first. Then the next section is placed upon the floor. By this time the first section is cool enough to use bricks on the first leg of the second section. And so on throughout the seven sections, one after the other.

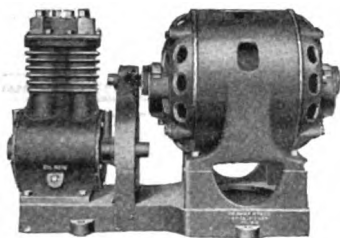
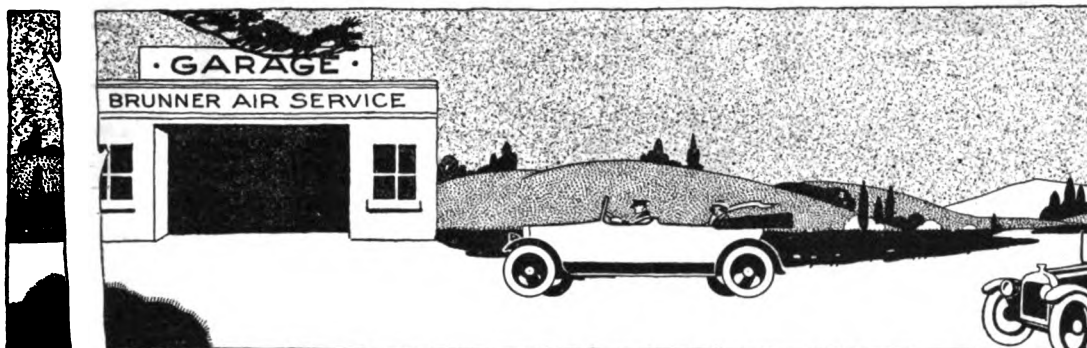
After the sections are all welded it is best to fill them with water under city pressure in order to locate any leaks that might occur. If a leak appears it is necessary to preheat the entire leg the same as at first. Then apply the flame to the leak, bring it to the melting point and puddle again with the filler rod. The leak is usually small and is generally caused by slag or dirt in the welded metal. Work this dirt

left, and regulate the expansion and contraction. Then you will have no trouble welding furnace sections.

Estimating Contraction

Question—Can you tell me how much cast iron expands and contracts?—D. Hart, Texas.

Answer—Foundrymen allow an eighth of an inch per foot for contraction when making patterns for cast iron jobs. In other words, if the casting is to be four feet long and one foot wide when cold, they make the pattern or mold one-eighth of an inch to the foot longer. That is, the pattern is four feet and four-eighths (or one-half) of an inch in length, and one

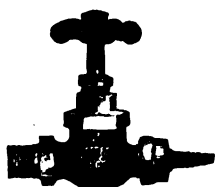


**IN THE GARAGE BUSINESS TODAY
REPUTATIONS ARE BUILT ON SERVICE
AND THE VERY FOUNDATION OF GARAGE
SERVICE IS A DEPENDABLE AIR COMPRESSOR**

INVESTIGATE THE **BRUNNER** AIR COMPRESSOR



Garagemen who investigate the air compressor field thoroughly before placing their order, invariably select the Brunner because they find a predominance of Brunner Air Compressors in the successful neighboring garages and the users always gladly recommend the Brunner, which has rendered high class service and helped them in building up their reputation.



Years of dependable and efficient service in the garage have built up an enviable reputation for the Brunner Air Compressor, which is being maintained by the continued dependability of Brunner Compressed Air Service.

Dependable compressed air tanks and fittings are just as necessary as an efficient air compressor.



A leaky needle valve, tank or air hose will reduce the efficiency and shorten the life of a good air compressor as well as add to the operating cost—and an improperly constructed air tank, an inaccurate air gauge or an unreliable safety valve will render a compressed air plant absolutely dangerous.



Brunner Compressed Air Tanks and Fittings are both safe and reliable, and will permanently increase the efficiency of any imperfect installation.

A length or two of Brunner "Resistoil" Air Hose would permanently reduce this item of expense, and convince any garageman that it is by far the best air hose obtainable.

Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner Jobber who covers your territory.



BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, N. Y.

Cincinnati Branch:
CINCINNATI, OHIO

"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies"



Mechanical and Engineering Problems

Cause of Carbon

Question: Can you tell us whether or not gasoline causes carbon? Some people say that it does and are blaming the gasoline we get now for all their carbon troubles. I always thought oil caused the carbon by burning up in the cylinders and leaving a deposit.

J. H. G., Texas.

Answer: I have heard the same talk and, indirectly, it is true. That is, incomplete combustion caused from poor fuel will cause more carbon to be deposited, but I do not think that this comes from the fuel itself. I never saw a chronic case of carbon forming that I could not relieve by the right oil. The gasoline may leave a light soot but not hard carbon, and the last is the kind that causes trouble.

* * *

Battery Troubles

Question: We have had a lot of complaints lately on account of storage batteries. Some of them last about a year and some only a few months. We have a few that have lasted longer. We have a 1911 Cadillac that comes here for repairs and the owner claims that he has the same battery that he got with the car. Whenever we send in a bad battery we always get word back that it will be cheaper to furnish a new one than repair the old one and they offer to make us an allowance on the old one. What do they do with the old ones? Is there any way we can make batteries last longer? How can we keep the wires to the battery from getting all over green mould?

Garage, Indiana.

Answer: The storage battery is a delicate thing and should be charged and discharged regularly to keep it in good condition. It should also have constant attention to see that the electrolyte is kept up to the proper point. The average battery in a car does not get this. The battery is put together and then sealed up and put into service. The car owner rarely looks at it unless it gives trouble, and then it is too late. It is charged irregularly and at varying currents. It is bounced and jolted around over rough roads. All this has a bad effect, but I think the real permanent damage is done by the starting devices.

You have no doubt seen drivers sit in the seat and turn the motors over for several minutes with the starter when a little attention to the choking device would have started the engine in a couple of revolutions. This puts a tremendous strain on the battery. The starting motors use a good deal of current, in fact, it is almost the same as putting a short on the battery.

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

This has a tendency to "buckle" or warp the plates and also to break the thin wood separators between the plates. A little attention to these points will greatly increase the life.

The Cadillac you speak of has what is called the 6-24 system. Six volts are used for lighting and ignition and 24 volts for starting. The battery is much larger than those now used and the current consumption of the starting motor is less. These batteries stood up well and I have no doubt the owner is right when he says he is still using the original one. I know of one that was put out in 1910 and is still giving good service. It has been overhauled several times, but the expense has not been great.

The manufacturers use the old cells, the boxes and the metal in the plates.

Clean the terminals of the wires and also the battery terminals by washing them with a saturated solution of washing soda. Give them a thin coating of pure vaseline before connecting again.

* * *

Replacing Bearings

Question: How can one tell when to replace a ball bearing of the plain type? These bearings get loose with use, but can be adjusted. The point is when to quit adjusting and replace the bearing.

G. & Co., Illinois.

Answer: Roughly speaking, the bearing should be replaced whenever there is any appreciable wear. You will generally find pits or grooves on the balls, race or cone before this. Whenever you find any of these showing signs of pitting, replace at once.

* * *

Friction Transmission Faults

Question: I drive a car with a friction transmission and get along all right until I have a long hill to climb. Then if I want to go up in a low speed the transmission keeps working into high speed. What makes this?

W. G. S., Illinois.

Answer: Take a look at the surfaces of both the fiber wheel and metal disk. If these are both true, it will be in one or both of the jack shaft bearings.

Postal "Zone" System To Penalize Readers

Neither the aeroplane nor the wireless telegraph constitutes the greatest milestone of progress in 1918.

The greatest thing that has happened in this country that has put Americans further along the pathway of progress has been the fact that more Americans have learned to READ than any other of the people of the earth.

How have they been able to put into practice their knowledge and how have they been encouraged to read more?

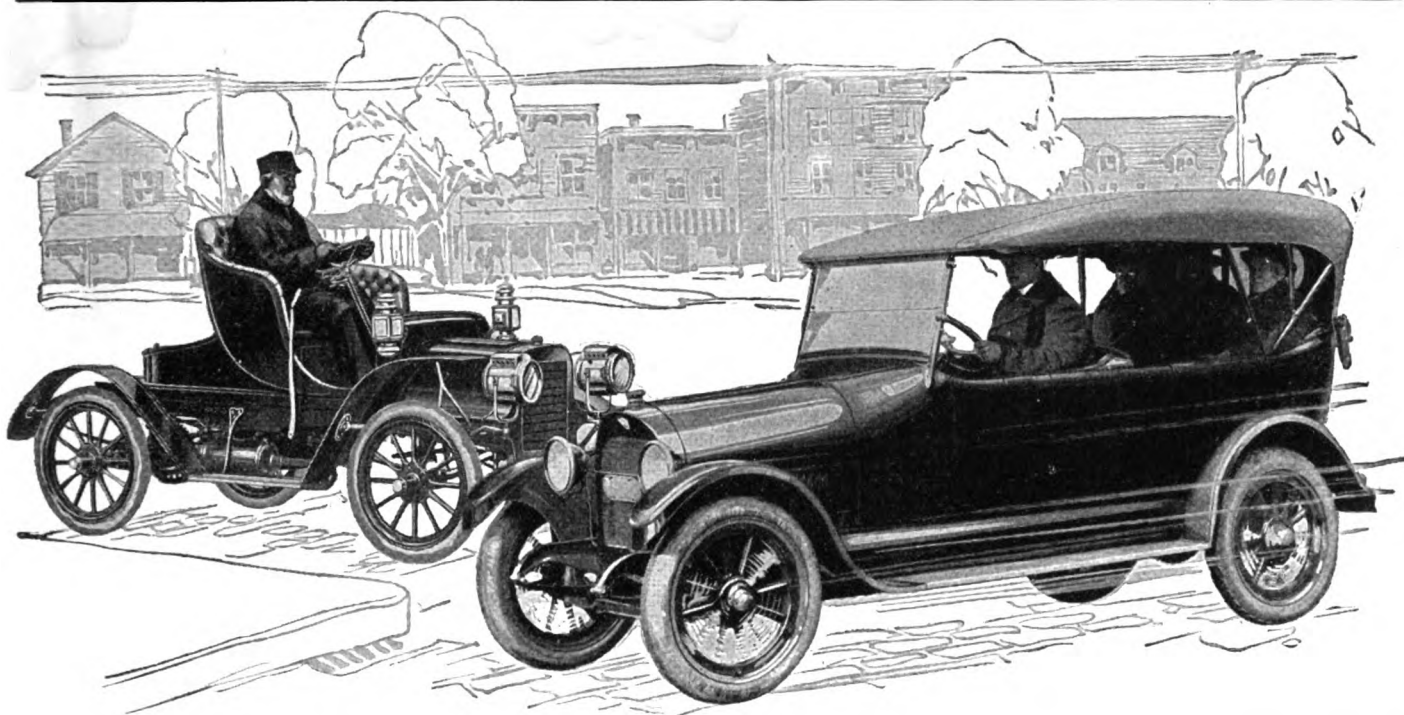
By the periodical press of the country. By the newspapers, the weeklies, the trade journals and the magazines. These have been cheap.

But this is about to become a thing of the past. The era of the magazine and the trade journal that was within the reach of every pocketbook will be gone unless the citizens who have benefited by the fact make known their wants in emphatic terms. Congress has enacted what is called a "zone" system law that will make it impossible for the publishers to circulate their magazines and weeklies and newspapers at the postal rate they have had heretofore. It passed a law increasing the postage on periodicals to you, the readers of this publication, from 50 to 900 per cent. And it did it by re-establishing a postal "zone" system that was abolished by President Lincoln in 1863. When this "zone" system goes into effect, the man in California will be unable to buy a magazine published in New York for the price he now pays. The citizen of St. Louis will pay more for the same magazine than the citizen of Boston. Is that real, progressive legislation?

Write your Congressman what you think about it—do it NOW! Your postmaster will tell you who he is.

More than 12 percent of its cars and 21 percent of its truck deliveries since December 1 have been made by the Packard Motor Car Company to its branches and dealers via the drive-away method. These percentages represent either so much relief to the railroads during this period or just so much more business which could not have been done if the drive-away had not been adopted. These figures take no account of the hundreds of United States Army trucks which travel to the seaboard under their own power.

Bearings Service for Any Car



From the Oldest to the Newest

Can you remember the Globe Car, the Sphinx Car, the Dragon, the Chalfant, or the Great Smith?

Probably not. Yet, if an owner of one of these cars, or many others whose names have passed into oblivion should ask us for bearings service, we would be ready to supply his needs intelligently and immediately.

Manufacturers of Timken, Hyatt and New Departure bearings have provided us, their official national service representatives, with complete and authentic engineering data. With this unique information and with the complete stocks of these bearings on hand in all of our twenty-two branches, we are able to supply the bearing requirements of practically any make of motor car, motor truck or tractor.

In addition to our twenty-two direct branches situated in the most important automobile centers of America, there are several hundred agents representing us in smaller cities and towns. These agents are equipped to give you expert advice and supply bearings for repair and replacements in a prompt and reliable manner.

Branches In All Principal Cities

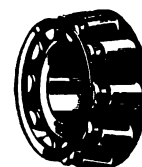
New York
Detroit
Chicago
Boston

San Francisco
Los Angeles
Atlanta
Seattle
Minneapolis

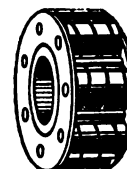
Kansas City
Dallas
Cleveland
Denver

Indianapolis
Rochester
Philadelphia
St. Louis
New Orleans

Omaha
Pittsburg
Portland, Ore.
Toronto, Can.



*Timken
Roller Bearing*



*Hyatt
Roller Bearing*



*New Departure
Ball Bearing*



BEARINGS SERVICE COMPANY

GENERAL OFFICES: DETROIT, MICH.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Victor Moon Is Engaged by Ohio State Trade Body

Because he had been urged by Secretary of State Fulton to retain his position, State Automobile Registrar W. A. McCurdy requested the Ohio Automobile Trade Association to release him from accepting the position as Commissioner of the Association, commencing April 1.

The executive committee authorized President A. E. Mitzel, to employ Victor Moon, Toledo, associated with the Toledo Rubber Company, to take the position. Mr. Moon has been an active member of the Association for some time, and has also been a member of the board of directors. He volunteered to resign his position with the Toledo Rubber Company to act as Commissioner of the Association and report for duty on April 15.

The Association has gained more than 200 new members since February 1.

National Commerce Body Advocates Return Load Bureaus

(Continued from page 19.)

truck from other points telephone to the bureau in order to get return loads.

"At the same time, the bureau can enlist the co-operation of business men who may have shipments to make.

"In order that any driver or other person from out of town may quickly ascertain if there is a return load for him, each bureau should be specially listed in the telephone directory."

This matter is directed to the attention of motor truck men throughout the United States in order that they may co-operate wherever possible in the extension of the idea. This work should be made easier through this official recognition from the Chamber of Commerce of the United States.

Idea Is Spreading.

The idea of "Return Load" is spreading

truck men should be at the disposal of such organizations in order to stimulate the establishment of "Return Load" bureaus.

The "Return Load" idea is scientific and practical. It means the permanent adoption of motor truck deliveries. It means the conserving of gasoline, since it eliminates the waste running of trucks.

At a number of points a comprehensive application of the plan has been made. The best example is Connecticut, where bureaus have been established, not only in all the principal cities, but at many smaller points. Trucks are being used at a new efficiency. Many prominent firms who had never before used trucks have now diverted their haulage from railroads to highways, because the "Return Load" system permits a profitable use of the vehicle both ways.

The operation of the plan is simple. At each "Return Load" bureau there is on file a list of truck owners who seek return loads and a list of shippers who have hauling. The data on file is as comprehensive as possible. It includes the name and address of the owner of the truck, its capacity, its routes and description of special routes covered only on certain days.

Assuming a truck owner has a haul from Hartford to New Haven. Before starting from Hartford he looks in the telephone book, gets the "Return Loads" number, explains that he will be in New Haven and will have an empty truck ready to take care of a haul.

Assumes No Responsibility.

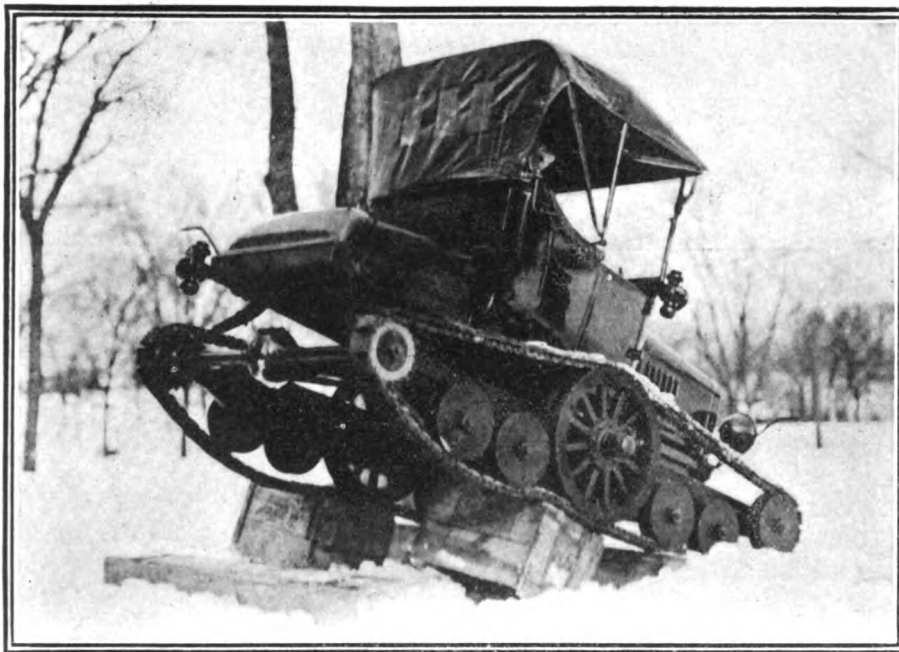
From his daily list of applications for haulage, the "Return Loads" bureau operator takes a suitable one. The Hartford man having disposed of his load in New Haven, calls on the New Haven shipper and takes the return load. The matter of terms and responsibility is arranged entirely between the truck man and the shipper.

The "Return Loads" bureau takes no financial responsibility whatever, its task being limited to bringing the two elements together. These details have developed no difficulties in Connecticut. The result has been highly satisfactory in every respect.

This plan was worked out largely through George H. Pride, a member of the Highways Transport Committee, and R. D. Chapin, chairman. So successful was the result that it is now being largely extended.

Plans are now under way that call for the establishment of "Return Loads" bureaus in all the Atlantic coast cities and nearby points from Boston south to Washington.

It is therefore important that everybody in the truck business should know its ramifications and wherever possible bring the idea to the attention of the various organizations in the different sections that will co-operate in its adoption and application.



"Baby Tank," with its caterpillar tread to convert Fords into small tanks, invented by Charles H. Martin, of Springfield, Mass. When the immense English armored tank "Britannia" visited Springfield recently Mr. Martin, with his little vehicle, duplicated all the stunts performed by the big machine and did a few the British tank could not perform. Mr. Martin also invented the three and four wheel Knox tractors and the Martin rocking fifth wheel. He was the author of an article on trailers printed in the January issue of this paper.

Motor Accessories' Concern Announces Syndicate Service

In introducing its "Syndicate Service" to the accessory field the Motor Accessories Corporation, 170 Broadway, New York, is offering retail accessory dealers a proposition similar to that offered in the drug field some years ago by the American Druggists Syndicate.

"Our chief claim is service and protection in price to the trade, as well as assuring the dealer of quality and a well established line of motor accessories," said H. J. Curtis, president and general manager of the Motor Accessories Corporation.

all over the United States and it is highly probable that it will soon come up for consideration with your Chamber of Commerce, Board of Trade, local branch of the Council of National Defense or some other civic or patriotic organization striving to serve the United States Government.

It is of importance that all the practical experience in transportation held by motor

**Let us tell you how to
turn your spare hours
into cash!**



Avoid Disputes With Customers

You cannot afford disputes. They are costly in cash and customers.

It will pay to prevent them rather than have to adjust them.

The N. C. R. system in your garage *will* prevent disputes and protect you and your customers.

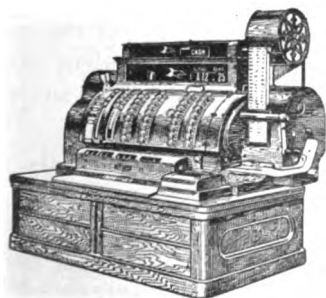
But disputes are only one of the troubles in the garage business.

The N. C. R. system will prevent troubles by enforcing correct records.

It protects your profits.

It enables you to tell right where you stand in volume of sales and profits.

***Install the N. C. R. system in your garage.
For details send this coupon today.***



Up-to-date National Cash Register
for 4 clerks

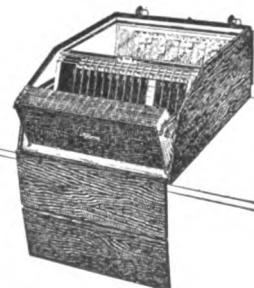
To Dept. 3303

National Cash Register Co., Dayton, Ohio

Please send me full particulars of your cash register for a garage, and the N. C. R. Credit File.

Name _____

Address _____



N. C. R. Credit File
for 180 Accounts

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Car Names in Electric Signs Bring Trade to Agent's Door

Dealer Thus Reaps Benefit of Big General Advertising Campaigns of Makers

The automobile sales agent is coming more and more to feature in his electric sign the name of the car he handles instead of his firm name. There is sound logic behind this trade tendency. Those who have business with the agency either know its location or are willing to take a little trouble in finding it. But thousands pass every day who are interested in the car, people who have heard about it through general advertising, and a good strong electric sign tells them where it is to be seen. In other words the sign ties the national advertising to the dealers' location.

The great disadvantage in showing the name of the car to the exclusion of the firm name is that with the ordinary type of electric sign a change in the make of car the dealer is handling makes the sign worthless. This objection has been overcome by the Flexlume Sign Co., Buffalo, N. Y., which has adapted its Oplex interchangeable signs to the needs of the automobile trade.

These signs consist of a rigid frame such as is used in other Flexlume signs, but each letter is a unit and easily interchangeable. Should the dealer make a change in the make of car he is handling the value of the sign is not lessened in the least. All that is necessary is to take out the old set of letters and replace them with new letters spelling the new name. The change can be made in a few minutes and at no cost further than the cost of the new letters, when any additional or different ones are required.

Many sales agents have found in these Flexlume interchangeable signs a way of getting an attractive electric sign at small expense. They have bought the sign frame and arranged with the makers of the various cars they handle to pay the cost of the letters to make up their own names. In many cases the manufacturers gladly agree to this, for they are quick to recognize the advertising value of having their names displayed in bright letters above the dealer's door, and the cost of the letter is only a trifle compared to the publicity it means for the car.

These interchangeable signs have all the substantial appearance of fixed letter signs. In fact, there is nothing about them to show that the letters are interchangeable. The characters are of the same snow-white, raised glass as other Flexlume Oplex signs, which gives the sign a splendid daylight appearance in addition to its night-time value.

The makers of Flexlume signs have prepared a booklet, "Twenty-Four Hours A Day," which tells all about Flexlume Oplex signs. It will be sent free for the asking.

Signal Motor Truck Firm Not to Merge with Paige

Word comes from Detroit that the Signal Motor Truck Company will not be sold to the Paige-Detroit Motor Car Company. It has become known that at a meeting of the officials of this Detroit made truck that the offer submitted to them by the passenger car concern was definitely rejected.

Plans have been made for increased production as a result of the growing demand for this company's product. There is also a report that government officers have been in Detroit lately looking over the company's plant. Only recently, a contract to supply the government with Signal trucks was carried out by the Paige-Detroit Motor Car Company for the Signal Motor Truck Company.

The Signal Motor Truck Company's general manager is John Squires and the sales manager is A. D. Kelley.

Winning Retail Tire Laurels In America's Rubber Capital

(Continued from Page 27.)

a month for rent, we eliminated four service cars which had been costing us \$150 a month each to operate—total saving effected on the cars, \$600. But the gasoline and oil sold at these stations practically paid for the rent and salary connected with their operation. This, in reality, the \$600 operating expense saved on the four cars, is net. At the same time, we are giving our customers 100 per cent better service.

Co-operation With the Salesman.

Our salesman is out only part of the time. This is the explanation: When changing a customer's tire, the service man fills out a card showing the condition of all the tires on the car. If the motorist is in need of tires, the salesman is sent out. And his selling chances are increased 100 per cent by his absolute knowledge that the prospect actually needs tires.

A complete record is also kept of

trips made for each customer, the location of his car on each occasion, and the material purchased in each instance. Hence, we are in a position to tell at a glance whether a given customer's business has been really profitable for us. Furthermore, we are enabled to show to a customer who has used our service a number of times that we have been of real service to him, and that we are entitled to discuss with him also the value of our tires and tubes.

All the above may be boiled down to these brief statements: Both our records and our experience show conclusively that the success we have won came from nothing less than quality in the product, good service to the motorist, and customer-confidence won—and held.

Logical Hour for Motor Trucks Due to War Time Conditions

(Continued from page 21.)

lishing postal service by motor trucks between New York and Philadelphia and New York and Hartford, Conn., besides using them almost exclusively in all of the large cities in the United States. With extension of this service between other cities much of the burden of hauling parcel post matter will be taken off the overtaxed railroads. Highway repair work is being done much quicker and more cheaply by the use of motor trucks for hauling and applying oil and hot tar than by use of teams.

The government is urging the organization of co-operative delivery service in all smaller cities and towns; such service reaches its highest development and economy in men and money when motor trucks are used. One motor truck vehicle does the work of three horse-drawn vehicles on an average. Thus the motor truck is adding to the efficiency of the nation, and thus too it is evident that now is the *logical hour of the motor truck*.

And remember, don't hesitate about buying the motor truck you need if you can get it. *Get it quick*. There's the rub—for there certainly will not be enough to supply the full demand in 1918 and *prices are going to be much higher*.

DON'T WASTE AIR IS NOT FREE IT DOES COST MONEY

**Every pound of air pressure you produce
costs you real money
Save Air and Money by using**



Style A
List Price \$3.00

ROMORT AUTOMATIC AIR VALVES

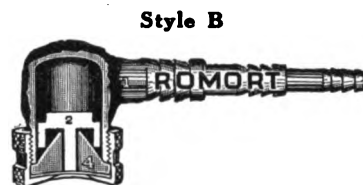
For Service Stations

The Style A Valve is a guaranteed device that has no equal for free air stations.

Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to hard, rough usage. Air is released only when the Valve is pressed onto the tire. Equipped with the famous Romort Pump Connection Rubber.

The Style B Automatic Air Valve is recommended to free air stations

requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. We strongly recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.

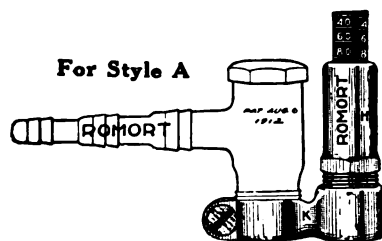


Style B
List Price \$1.00

SAVE YOUR TIRE GAUGE

Do not loan your tire gauge and then waste time watching to see that you get it back. Attach it to your ROMORT Automatic Air Valve with a

ROMORT TIRE TESTER ATTACHMENT



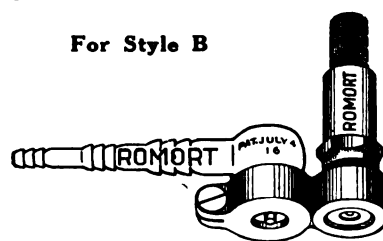
For Style A

A Garage Necessity---List Price \$1.50

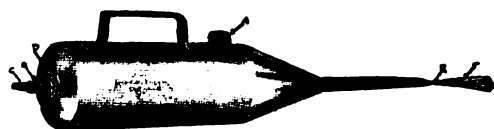
A device for attaching your gauge to either Style A or Style B Romort Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflater combined in one, and the old trouble

of losing gauge is forever over. We sell only the holder attachment. Every garage with free air should be equipped with the Romort Air Tester Attachment.

Caution—When ordering, state whether for Style A or Style B Valve



For Style B



Price \$3.50

ROMORT Engine Cleaner

This device has no equal for cleaning the dirt and grease from automobile engines. A child can operate it, yet it does its work with a thoroughness that will satisfy the most exacting. Holds two quarts of fluid—common coal oil is best. With the long spout the operator reaches every nook and corner of the machinery—almost impossible with the old method of rags and waste.

We also manufacture straight and angle pump connections, tank connections and rubber washers.

All jobbers carry ROMORT Specialties.

WRITE FOR LITERATURE.

**MANUFACTURERS
ROMORT MANUFACTURING COMPANY
OAKFIELD WISCONSIN**

**SALES DEPARTMENT
THE ZINKE COMPANY
1323 South Michigan Ave. CHICAGO, U. S. A.**

Car Buyers Are Prospects for Farm Electric Systems

Many Lalley-Light Distributors Are Motor Tradesmen Who Sell Automobiles and Light Plants to Same Customers

Independent and individual electric light plants are rapidly growing in favor for those away from big public service lines and the Lalley Electro-Lighting Corporation, Detroit, is presenting a farm lighting system to automobile dealers and distributors that may be handled in conjunction with their motor car business. Farm lighting systems and motor cars are not conflicting lines of merchandise, and the prospects for the one are usually prospects for the other.

The complete plant consists of an internal combustion engine direct-connected to an electric generator and a Willard storage battery. Both the engine and the generator are mounted on a common base that holds the gasoline tank, making the power element a complete unit.

The engine is especially designed for electric lighting work, and has a 2½ inch bore and a 2 inch stroke, with a rating of 1½ horsepower. It produces approximately 1½ electrical horsepower through the generator.

The cylinder is ground and has a detachable head, and is water-cooled by the thermo-siphon system. Additional cooling is effected by air circulation through the generator by means of fan blades cast in the flywheel. Lap-joint rings are fitted to the piston instead of diagonal cut rings. The connecting rod is drop forged and connected to the crankshaft through extra large ball bearings.

A special float feed carburetor is used and is cast integral with the engine base. It has but one adjustment, which it is unnecessary to change for starting. A high tension magneto is direct-connected to the crankshaft, giving the engine an independent ignition from the generator circuit.

Flickering Is Prevented.

Constant speed regulation, tending to prevent flickering lights, is effected by means of a governor. This governor runs in a constant bath of oil and acts directly through a rocker arm on to a balanced plunger throttle, controlling the quantity of fuel passing to the engine. It is said that this governor is 97 per cent accurate because of the employment of a simple multiplying leverage through the rocker arm. This governor prevents the engine racing when the load is removed, and by keeping the engine speed constant produces a constant voltage.

All working parts are completely en-

closed in a cast iron housing that prevents damage from outside sources and prevents leakage of oil.

The oiling system is especially simple. The cylinder is oiled through the mixture, as the lubricating oil is mixed with the gasoline in the supply tank. Externally there are four oil holes that require occasional attention.

The generator develops 30 volts, and its entire output can be used direct, without having the battery in the circuit. The advantage here is that the batteries may be charged during the day for lighting purposes; and pumps, cream separators, etc., operated directly from the generator without effecting the charge in the battery.

Generator Can Run a Motor.

Willard storage batteries of the glass jar, sealed cover type, are used. Sufficient electricity is stored to light 82-16 candle-power 20-Watt lamps. When connected direct, the complete output of the generator can be used and will run a motor developing up to 1½ horsepower.

To start the engine it is simply necessary to close the switch mounted on the switchboard panel. Momentarily the generator becomes a motor and cranks the engine. Once started, the process is reversed and the batteries are charged. When charged, an automatic switch is opened, stopping the engine. The switchboard carries an ampere-hour meter which shows the condition of the batteries at all times. Gasolene is used as a fuel and the engine



View of new R. & P. tractor just produced by the R. & P. Tractor Co., at Alma, Mich. The P-T pad wheels and the flexibility of the frame construction is shown in the picture. A detailed description will be printed in the May issue of this paper.

will run from 5 to 6 hours on one gallon of gasolene.

The complete installation is shipped with the batteries completely charged, together with detail instructions as to the method of installation, operation and care.

At present about 70 per cent of the Lalley distributors are engaged in the automobile business. These men find that the two lines harmonize exceptionally well, as the man who can afford a motor car can afford and usually wants a farm lighting system.

Avery Company Conducts Tractor Service School

Believing that it is a good plan to educate users in advance of the time when they will actually employ the machines on their farms, the Avery Company, Peoria, Ill., has been holding schools for tractor buyers and sellers for some time. L. R. Von Volkenburg, the Avery Company's service engineer, has been directing these "Service Schools," as he calls them, throughout the United States for the last four months. He describes their purpose as follows:

"The primary object of these schools is to familiarize the tractor owner with his machine in such a way that he will become more educated and therefore derive a greater benefit from his machine.

"Secondly, it is to educate the dealers up to a point where, when a customer is in trouble, the dealer will be familiar enough with the machine so that he can at once discover and remedy such troubles.

"Thirdly, we bring out very distinctly our exclusive features and selling point talks. This is for the benefit of the dealer and his sales organization and altogether in this way we expect to reduce our service expense materially.

"Up to the present time, we have found the implement dealer a much more logical channel through which to dispose of our product. There are a great many garage and automobile dealers, however, who are getting into the game and in some instances are doing splendid work. Personally, I like the garage owner as a tractor dealer, inasmuch as he is prepared both with machinery and mechanical ability to take care of such motor and mechanical troubles that will develop in all machines.

"On the other hand, we find from our experience that many times our garage mechanics get into more serious trouble with tractor motors than the novice from the fact that they do not realize that an engine in a tractor is running under much different conditions than in an automobile. Therefore, they oftentimes expect too much of the tractor motor.

"This is a point that has got to be worked out gradually and carefully. There is no doubt in the writer's mind but what both the garage owner and implement dealer are good channels through which to dispose of tractors and plows."

Removing



Showing Lawco being used on Kelsey Rim. Tool placed inside. Lifting on lever expands rim sufficiently to unlatch dovetailed lock. Used in same manner on Detroit rim.

Just One Minute

To Remove Tire From Rim With

THE LAWCO RIM TOOL

Just three simple movements—breaking, contracting, and latching—and your

tire is free from any demountable transversely split rim in *less than a minute*.

The Lawco Rim Tool gives results quick as a monkey wrench. Its claws are hooked over the rim and contracted by a simple motion of the lever. The lever locks the tool automatically and holds the contraction. This leaves both hands free to remove tire. Having been repaired, tire can be put back on while the rim is still in the grip of the tool.

To latch rim at the split, tool is placed inside rim. It will fit inside because one arm has a self-adjusting claw capable of shortening the radius of the arm. A reverse movement of the lever expands the tool and rim as much as is necessary to permit latching of the ends.

The Lawco Rim Tool can be used on more than 50 types of rims. It works faster than tools costing \$50. Made of forged steel, simple and strong, it is practically indestructible.

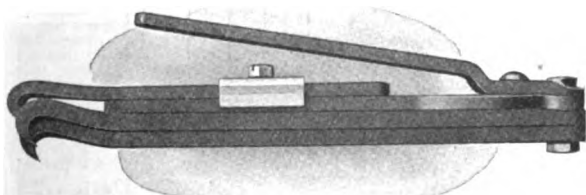
Used according to directions it cannot injure a rim, tire or valve stem. Dead easy to attach and adjust. Weighs but 5½ pounds, yet replaces tools weighing as much as 300 pounds. Collapsible.

Price, \$3.50

Get the LAWCO Rim Tool from your Dealer.

If he can't supply you, write us.

THE F. H. LAWSON CO., Dept. A, Cincinnati, Ohio

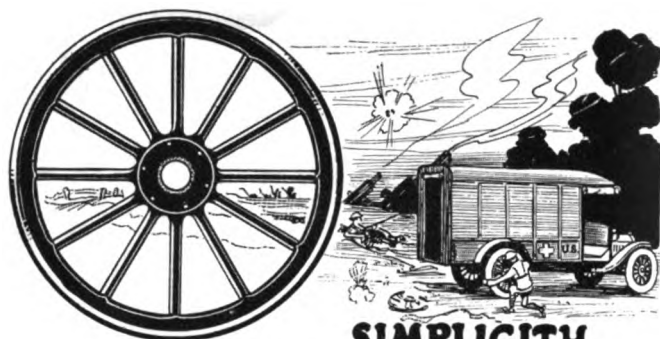


Closes like a jack knife to go in tool box.

Replacing



Effect produced by hooking adjustable claw on the side opposite from the other two claws. Causes rim to contract in a helical form without either end in any way disturbing the valve stem. This also makes it very easy to slip rim out and in.



Demountable Wheels Enable That Quick Change

Are you prepared for that Spring Drive on your Ford Customers?

The SIMPLICITY DEMOUNTABLE WHEEL is fast becoming the most popular accessory—Ford owners realize that it is the biggest time and trouble saver they have ever been able to buy. It takes a dealer only four minutes to convince a Ford owner that he needs a SIMPLICITY DEMOUNTABLE WHEEL—the customer can see the merits of the SIMPLICITY without a dealer's aid—they sell themselves.

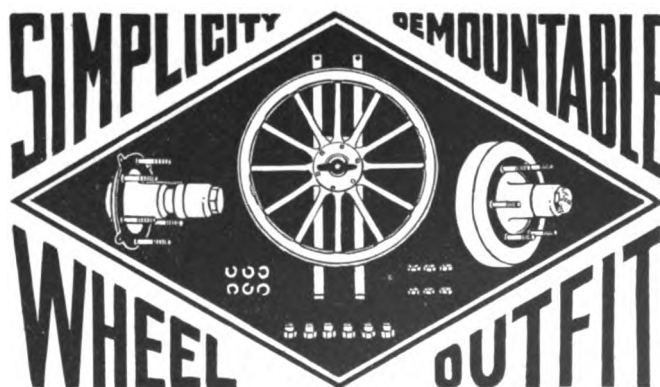
Simplicity Outfits Mean Big Sales

Every Ford owner in your territory is interested in the SIMPLICITY DEMOUNTABLE WHEEL outfit. One wheel will sell others. They are profitable to the dealer. They are simple to install. They last and please the customer.

GET PARTICULARS ON OUR DEALER PROPOSITION TODAY

If you are not already selling the SIMPLICITY outfits, write us today for free illustrated descriptive literature and dealer's proposition. Let us tell you how to increase your spring profits.

The Simplicity Demountable Wheel Co.
GRAND RAPIDS MICHIGAN



In the Truck and Trailer Field

New Dump Body Produced to Haul Grain on Trucks

Load Is Balanced to Allow Easy Discharging---Set of Gears Take Up the Wire Cable on a Drum

Production has been started by the Parry Manufacturing Company at Indianapolis on a new dump body for use on a Ford and other one ton trucks. This body is designed especially for hauling grain to the elevators.

The dumping arrangement is novel in that the load is balanced just a few inches forward of the pinions. By this arrangement it is fully as easy to discharge the contents of the body when loaded as to dump the empty body.

A set of gears take up the wire cable on the drum at a low ratio so there is very little question but that a man could easily lift the forward end of the body.

The body itself is composed of two sections. The lower panels are 16 inches high inside and are very strongly braced both inside and out. The upper panels are removable and are 10 inches high; they are clamped to the lower panels. The removable front panel fits inside of cleats and is clamped to the removable side panels.

The lower section of the end gate is the old familiar Comstock style such as is used on the farm wagon. The upper section is clamped to the removable side panels.

LEGAL NOTICE.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,
of The American Garage & Auto Dealer, published monthly at Chicago, Ill., for April 1, 1918.



The picture shows strikingly how great a load can be hauled on a trailer. The King semi-trailer in the photograph is rated at 3 tons capacity, but it carried the 4½ tons of wool bales without any difficulty.

State of Illinois, County of Cook, ss.—Before me, a notary public in and for the state and county aforesaid, personally appeared J. R. Hastie, who, having been duly sworn according to law, deposes and says that he is the president of The American Garage & Auto Dealer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid

stockholders owning or holding 1 per cent or more of the total amount of stock): H. D. Fargo, 53 Jackson Blvd., Chicago; J. R. Hastie, 53 Jackson Blvd., Chicago; J. C. Kelsey, 53 Jackson Blvd., Chicago; S. R. Edwards, 53 Jackson Blvd., Chicago; I. B. Lipson, Fort Dearborn Bldg., Chicago; F. X. Mudd, Fisher Bldg., Chicago; E. C. Hole, 431 S. Dearborn St.; W. H. Himmel, 1125 Lunt Ave.; S. G. Levy, Fort Dearborn Bldg.; E. T. Clissold, 327 S. La Salle St.; R. S. Clissold, 327 S. La Salle St., Chicago.

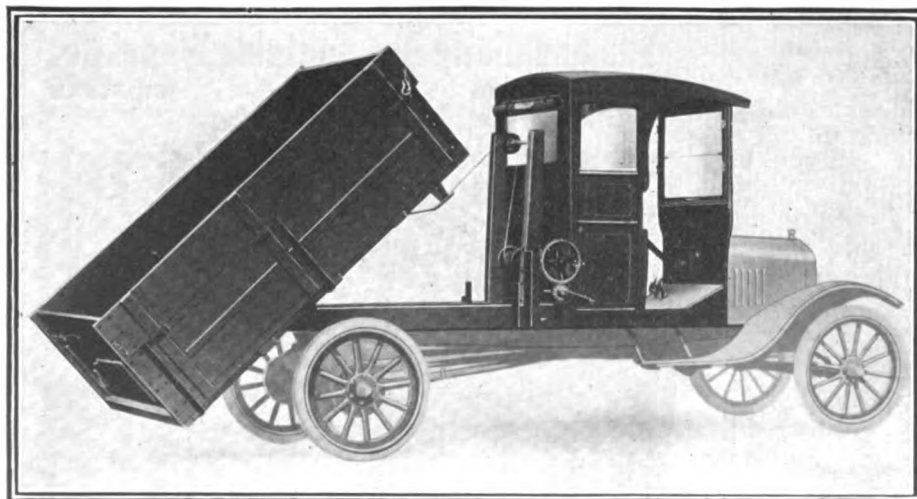
3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state).—None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

J. R. HASTIE,
President.

Sworn to and subscribed before me this 20th day of March, 1918.
(Seal.) E. V. CROSS,
(My commission expires Oct. 24, 1922.)



Parry Grain Dumping Body for Ford Trucks.



Time To Cash In On **AD-EL-ITE**

Motor Carbon Remover

FIVE million motor cars are "hitting the trail" this summer. Most of them saw service last season—and last season's carbon needs cleaning out. 90% of your customers—and a good many who are not already buying of you—are live prospects for Ad-El-Ite Motor Carbon Remover right now.

Ad-El-Ite Motor Carbon Remover makes cars run smooth as a whistle. Up hill, down hill and over every road. No "knocks"; no kicks; no jerks. Cleans out every speck of harmful carbon and makes motor run like new. No lay-up. Harmless to metals. A steady profit-puller.

SPECIAL

Enough Ad-El-Ite Motor Carbon Remover to thoroughly clean two or more cars will be sent pre-paid anywhere in the U.S. for \$1.25.

Write For Valuable Book

"Auto Troubles Cured," most helpful book of its kind ever printed, will be sent for 25c, or is free with a purchase of any Ad-El-Ite materials. We will also send prices, discounts and full particulars regarding our unusually effective selling plan.

DEPT. A-4

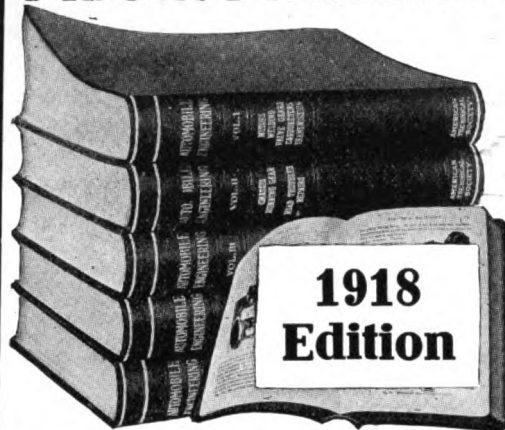
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These Books Answer Ten Thousand Questions About Automobiles!



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Every Garage man, every Dealer, every Repairman, every Car Owner needs this wonderful set of books—the most complete, practical, **helpful**, up-to-the-minute auto books in existence. They tell you—**instantly**—anything and everything you want to know about all kinds of automobiles and garage work.

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Genuine Morocco Leather, Gold Stamped

Recognized everywhere as the final authority on automobiles, their operation and repairing. Almost two entire volumes on latest Ignition, Starting and Lighting systems. 2400 pages (5 1/4 x 8 1/4") and 2000 illustrations, tables, diagrams, etc.

Everything About Automobiles, Including,

Explosion Motors	Transmission	Commercial Garage
Welding	Final Drive	Design and Equip-
Motor Construction	Steering Frames	ment
and Repair	Tires	Electrics
Carburetors and	Vulcanizing	Storage Batteries
Settings	Ignition	Care and Repair
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FREE Consulting Service With each set we give you free, a year's Consulting Membership in the American Technical Society. The regular price is \$12. Put your problems up to our Staff of Experts, for one entire year.

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Dept. A, 7864, Chicago, Ill.

Please send me the 5 volume Automobile Engineering for 7 days' examination. I to pay small shipping charge. If I decide to buy, I will send \$2.00 within 7 days and the balance at \$2.00 a month until \$17.80 has been paid. Then you send me a receipt showing that the \$25.00 set of books and the \$12.00 Consulting Membership are mine and fully paid for. If I think that I can get along without the books after the seven days trial, I will return them at your expense.

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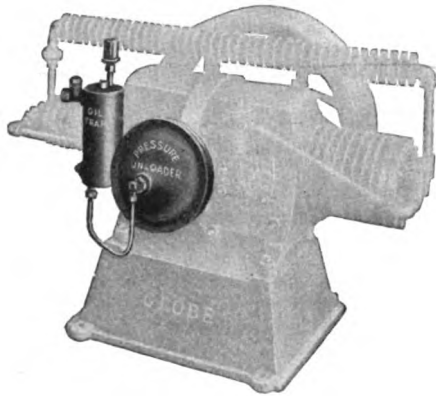
Address

Reference

Accessories and Garage Equipment

GLOBE UNLOADER SAVES TROUBLE HARTON MONEY SAVING RECORD SYSTEMS FOR GARAGES.

H. M. Dunlap, manager of the Globe Manufacturing Co. at Battle Creek, Mich., announces a new device recently brought out in connection with Globe, Type B, two-stage air compressors, in the form of an unloader, operated by centrifugal action, which automatically opens a release valve when the compressor is stopped, and when the compressor is again started, as it approaches the normal working speed, the release valve closes, thus permitting the compressor to start without any load, preventing the burning or throwing of belts when starting, or the burning of motors in the case of the motor drive units.



CORK INSERT TRANSMISSION LININGS SAVE FORD REAR END.

The benefits brought about by the use of Cork Inserts on Ford transmissions are wide reaching. Because of the smooth and positive action produced in the Ford transmission, there is a material lengthening in the life of the different parts affected.

It is not generally understood that the service brake on the Ford car is inside the crank case, and the braking or retarding action is communicated entirely through the drive shaft, through the drive pinion, master gear, and to the rear axle. In applying the brake on the Ford car the strain comes particularly on the drive shaft, drive pinion and master gear. These cork linings are made by the Advance Automobile Accessories Corporation, 56 E. Randolph St., Chicago.

Garage owners who are in doubt as to the best system of book and record keeping for their establishments can undoubtedly receive much help in solving their problem by writing to Thomas J. Harton & Company, 212 Church Street, New York. This firm's money saving system for garages is being used by many operators of garages with very good results. The company has given special attention to the methods required for garage use, and after careful study has perfected the system now offered. The Harton firm has received many letters of praise from garage operators who have installed this system.

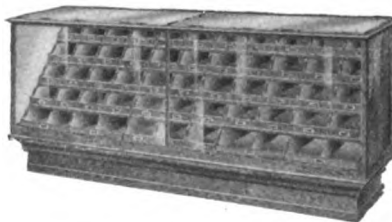
The company also has a holder to keep an inspection or repairing record instruction card. The holder is made of waterproof material with a celluloid front to protect the card, which can be read and checked without removing from the holder. The Harton concern has also had much success with its garage stock record, a fireproof cabinet made of steel.

BRECO CHARGING APPARATUS SELLING RAPIDLY.

M. G. DELANEY, president of the Breco Electric Co., Toledo, reports that his concern is meeting with great success in the sale of its battery charging apparatus, which was described and illustrated in the February issue of the AMERICAN GARAGE & AUTO DEALER. Orders for these machines have been received so fast that all records for sales of charging apparatus in Toledo and its surrounding cities have been broken. Sixty of the machines have been sold recently at Toledo, fifteen at Columbus, six in Lima and five at Dayton.

DETROIT FIRM MAKES CONVENIENT ACCESSORY SHOW CASE.

One of the most convenient show cases for the use of accessory dealers is the No. 364 accessory case produced by the Detroit Show Case Co., Detroit, Mich. Each drawer has bronze pull and card holder. Some of the drawers are made double width, with removable partition, to hold accessories too wide for the single drawers.



This case has an oak or birch frame and can be finished as ordered, golden oak being the standard stock finish. It is glazed with a bevel plate glass top, in two pieces in lengths more than 5 feet, and with double strength glass in front and ends.

JENSEN PUMP PROVES EFFECTIVE.

In a general letter to the pump salesman of the W. H. Howell Co., General Manager D. P. Drew tells of an interesting test with the Jensen pump, made by the Howell firm at Geneva, Ill. His letter was as follows:

"We had an inquiry from one of the large

est sources of output in this country concerning our Jensen pump, and one of the provisions called for is effective operation against high pressure. While we have given you some figures heretofore as obtained by the writer, we were determined to go the limit this time with the pump and see just what it would do.

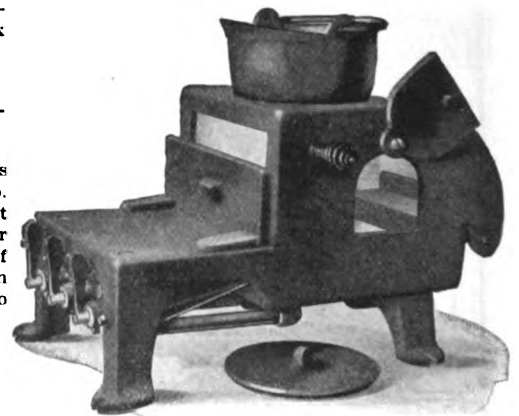
"We have a steel pressure tank for testing purposes in our factory and you will no doubt be interested to know that we blew the bottom out of this tank with the Jensen pump at 180 pounds pressure. While, of course, it took some strength to operate the pump against this pressure, it had not reached its limit; the gauge was steadily going up when the tank exploded.

"This is an actual test and you need not hesitate at all in giving the information to your customers and prospects."

NEW JOHNSON BENCH FURNACE.

The Johnson Gas Appliance Co. of Cedar Rapids, Iowa, which has made a specialty for gas appliances for many years has recently added to its business another type of furnace known as the Johnson No. 118 bench furnace, which is especially designed for garages and repair shops.

Any garage or repair shop located wherever natural or ordinary city gas can be obtained can use this new style furnace very advantageously. A temperature of around 1800 degrees Fahrenheit is obtainable in the fire-box without a forced air-blast being necessitated. All the user has to do is to connect the furnace to a gas supply pipe, and it is ready for instant use.



The plate in front of the furnace is removable, also the melting pot, and the cover as shown underneath the furnace can be inserted in the top; the side-door can be dropped so that all the heat can be condensed or concentrated in the chamber if essential. By inserting rods, axles, etc., through the side-doors of the furnace, and letting the flames play upon the article, same can be readily straightened.

This furnace will successfully heat-treat many carbon steel tools; it will quickly melt twenty pounds of soft metal at a time; or heat soldering irons up to fourteen pounds to the pair; or can be used for various other garage or repair shop requirements.

The Johnson Gas Appliance Co. will be very glad to send descriptive, illustrated literature to any interested garage or repair shop owner on request.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....

.....

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Name

Address

Announcing— **AMERICAN 5-GALLON DOUBLE ACTING CURB PUMP**

This new American pump is designed for filling stations and garages which demand "up-to-the-minute" equipment.

Some of the features which make this pump indispensable are:—

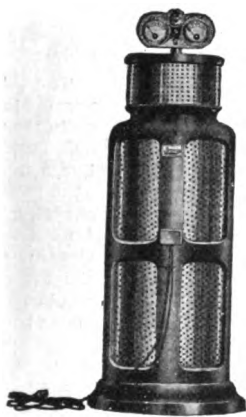
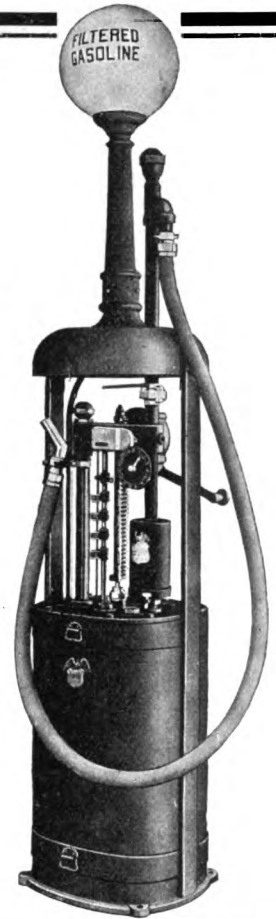
- 5 gallons every 11 turns of the handle,
- Double-acting, continuous flow,
- Pumps 30 gallons per minute,
- Accessible valves,
- Accurate measurement,
- Largest, heaviest, handsomest pump of this type ever designed.

This pump possesses the same high quality of materials and workmanship that characterizes all American Pumps.

Write for bulletins giving complete information, prices, etc.

Salesmen wanted—good territory open.

The American Oil Pump & Tank Co.
CINCINNATI, OHIO



Charging Five Sets of Batteries is an easy task for **THE Breco CONVERTER**

THIS new modern method of changing A. C. to D. C. for battery charging should readily appeal to garages and service stations.

Battery charging becomes a very simple, inexpensive and mighty profitable matter with the Breco Charger.

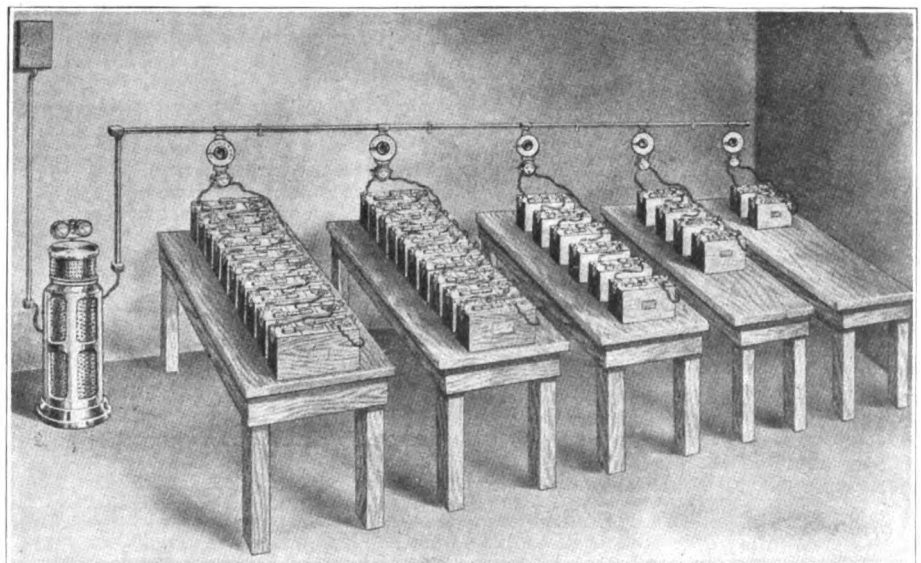
Designed to meet exacting requirements of hard, every-day service.

Guaranteed to give genuine satisfaction.

Price \$24.00 up. Sizes from one battery up.

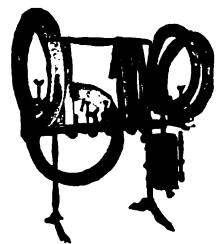
Write for descriptive catalog 22.

**THE BRECO
ELECTRIC COMPANY**
206 Huron Street
TOLEDO - OHIO



VANDERPOOL CONCERN MAKES MANY MODELS OF VULCANIZERS.

Tire repair service can be made a profitable adjunct of any garage or retail automobile establishment, but an efficient vulcanizer is very necessary to turn out work promptly and at a profit.



The present high price of tires and the probability that the selling figures will advance rather than decrease makes many car owners have tires repaired when they might buy new ones if the expense was not so great. The Vanderpool Company at Springfield, Ohio, makes a number of different models of vulcanizers and other equipment for tire repair service stations. One of these vulcanizing outfits is shown in the illustration.

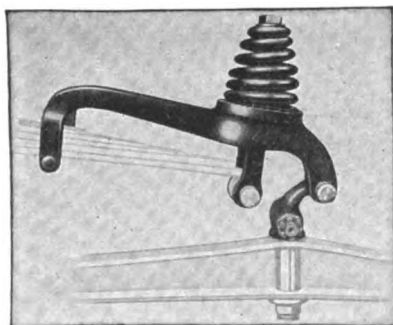
USES 750 SETS OF SIMPLICITY DEMOUNTABLE WHEELS.

The utility of the Simplicity demountable wheel outfits is shown by the fact that they are sold from coast to coast to thousands of commercial car owners for laundries, dry goods and department stores, taxicabs, express and telephone companies and in every line of business where prompt service is necessary. One Chicago firm with branches all over the world has already equipped 750 of its Ford cars with Simplicity demountable wheel outfits.

One of the largest rubber companies in the country is installing Simplicity demountable wheels throughout the United States at its service stations owing to the fact that tires wore better where installed with Simplicity demountable wheels. The wheels can not work loose and wobble nor wear the spindle, either of which causes a side play on the tread for which they were not built.

BURGESS SHOCK ABSORBER WINS FAVOR.

The Walter S. Burgess Mfg. Co. started to put the Burgess rebound check and shock absorber on the market December 10, 1917. By March 1 they had outgrown their old factory and are now in their new home at St. Joseph, Mich., the production having increased to more than 500 sets daily.

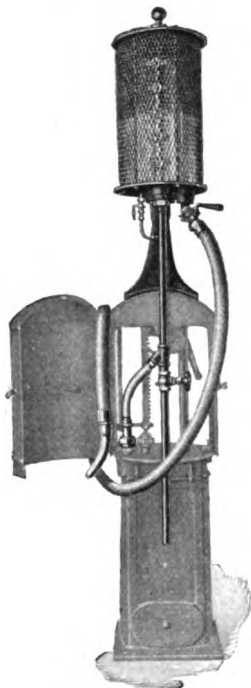


On the upthrow, with this device, the weight of the car above the chassis is transferred from the tips of the springs to points near the centers where the recoil is greatest. It is impossible to control rebound from the tips of the springs. The conical springs absorb vibrations before they reach the main spring of the car. Thus in one simple, easily attached article are combined two essential devices for the life and easy riding qualities of every Ford car.

The same type is used for all models of Ford cars. Every set is guaranteed as to material and workmanship. The Zinke Company, 1323 Michigan Ave., Chicago, is handling all sales.

GROETKEN PUMP DOME PLEASES FUEL DISPENSERS.

The manufacturers say that the visible measuring dome of the Groetken gasoline pump has done much to make this device popular with owners of garage and fuel dispensing stations. It has a 5 gallon capacity, and fills, measures and empties in less than 2 minutes. Gasolene buyers can see through the glass dome that the quantity of fuel for which they pay is correct.



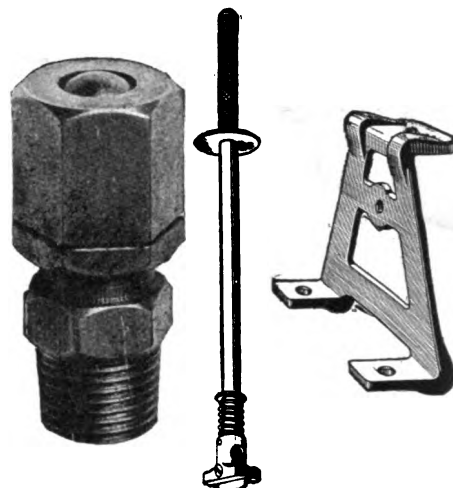
It is not necessary to buy an entirely new outfit as the Groetken device can be attached to an old curb pump. The makers declare that the use of the Groetken visible measuring dome will save buyers \$150 on each of their "blind" curb pumps to which one is attached. Many garages and fuel dispensing sections have two or three of these improved pumps, some of them four. It can be attached in less than half an hour and requires no operating expense. No electric motor is needed and the old pump is operated in the same manner as formerly. The dome is made by the Groetken Pump Co., Aurora, Ill.

HUDSON MOTOR SPECIALTIES FIRM HAS BIG LINE.

Repair shop and service station owners and managers can find much to interest them in the various products marketed by the Hudson Motor Specialties Company, Real Estate Bldg., Philadelphia, Pa. One of the features of this line is the Hudson crank case repair arm. This saves much time in fixing Ford crank cases, enabling a job to be finished in half an hour that would otherwise require a half day. It is not necessary to take the engine out of the frame and tear it apart so that a new arm can be riveted on. With the Hudson arm it is simply a matter of loosening three bolts, slip the Hudson repair arm in place, tighten the bolts, and the job is finished.

A very handy tool is the Hudson jointed valve grinder which is said to clean and grind valves uniformly and accurately. The head is a die casting, split and adjustable to any valve.

The Hudson automatic manifold air adjuster automatically adjusts the air feed through the manifold, at all speeds from idling to the highest speed of motor. The company declares that if a carburetor is adjusted before attaching the Hudson air adjuster it will be found necessary to cut down the carburetor to prevent the motor from racing, which proves that the consumption

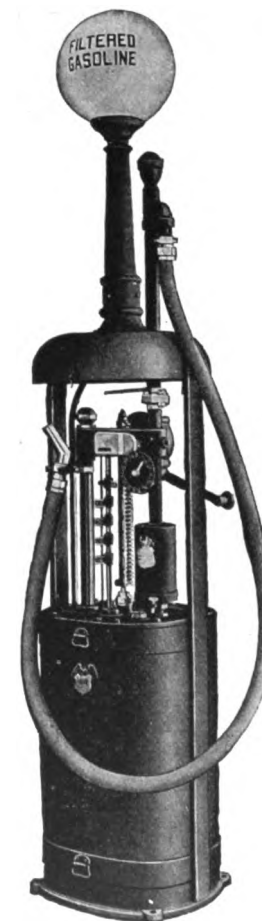


Left to Right—Air Adjuster, Valve Grinder and Repair Arm.

of gasolene is cut down by the use of this device.

AMERICAN GASOLENE PUMP DELIVERS FUEL RAPIDLY.

The American cut 105 gasolene storage outfit is designed especially for fuel stations or public garages requiring rapid delivery of gasolene. It is connected to an underground storage tank. The pump can be placed on the curb and the tank buried where most suitable for filling, but should be placed as near the pump as possible.



The American pump is double acting, continuous flow and delivers five gallons at a stroke, discharging gasolene in a constant stream (on both the up and down strokes of the piston) and requires only eleven turns of the handle to discharge 5 gallons. It will discharge 30 gallons per minute. This pump has quantity stops adjusted and set for measuring 1, 2, 3, 4 and 5 gallons. A discharge register with a large clock dial

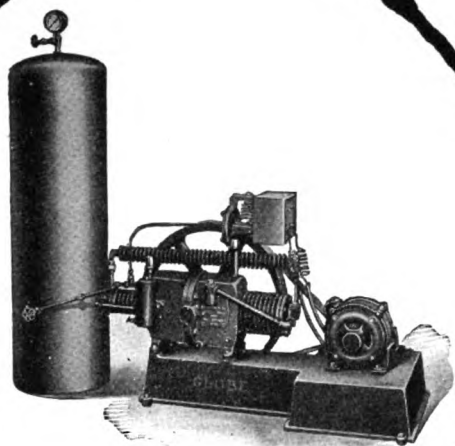
shows the amount pumped up to 15 gallons. The pump is enclosed in a symmetrical and substantial metal cabinet, being attached to the base, and enclosed by means of a dome and two sliding doors, which operate in channels. The electric light fixture is all wired up and ready for attaching.

AMERICAN GARAGE & AUTO DEALER accepts no doubtful advertising. Business-like dealings are guaranteed if the subscriber mentions the AMERICAN GARAGE & AUTO DEALER in his letter to the advertiser.

GLOBE

QUALITY

means
CLEAN AIR SERVICE



The installation of air equipment does not mean simply air compressors. You must protect yours and your customers' interests by supplying "clean air" free from oil.

GLOBE AIR COMPRESSORS are so constructed that it is impossible for the slightest bit of oil to reach the tire.

GLOBE TWO STAGE AIR COMPRESSORS represent the most economical service for garagemen.

GLOBE AIR COMPRESSORS give constant and efficient service. They last longer and are, therefore, cheaper.

The GLOBE UNLOADER is an exclusive feature that permits the starting of compressor without load. This device avoids the danger of burning your motor or the throwing or burning of belts. It also automatically drains the oil tap every time the compressor is stopped.

ALL TYPES OF AIR COMPRESSORS

Write us your air compressor requirements and let us recommend an economical and suitable outfit for your purpose.

Write us today for free illustrated literature.

GLOBE MANUFACTURING CO.
BATTLE CREEK MICHIGAN

A Milwaukee Curb Pump to Exactly Fit Your Business



Master Electric

No matter what your requirements are, there is a Milwaukee Outfit to exactly fit your needs. When you place a Milwaukee pump at your curb, you are not merely installing a device to measure gasoline, but you are getting your star salesman.

Every Milwaukee pump has the extreme speed and accuracy which brings the motorists. Why not boom your business now by installing one of these trade attracting outfits? 30 styles to select from.

MASTER ELECTRIC, the highest type of

filling station on the market. Pumps gasoline at the press of a button; 25 gallons a minute or down to a mere drizzle at the will of the operator. A large plain dial shows the motorists—and you—to the fraction how much gasoline was put into his car.

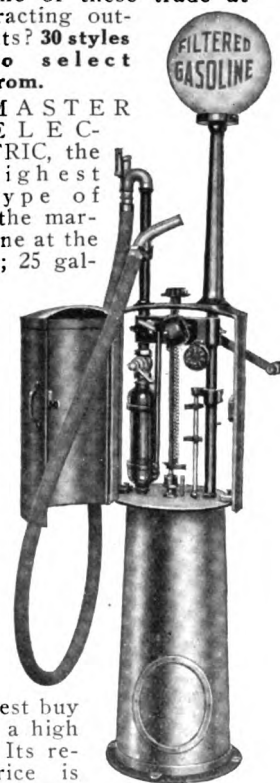
TYPE 37, "Roadway" type curb pump. One of our most popular hand outfits. Very handsome and durable; a great business-getter.

TYPE 34, the biggest buy on the market for a high class curb pump. Its remarkable low price is made possible by the large quantities manufactured. This is just the right outfit for the small retailer.

Write today for full information regarding these and several other types of gasoline curb pumps.



Type 34



Type 37

Milwaukee Tank Works
MILWAUKEE WISCONSIN

Manufacturers of the famous Milwaukee "Kant-Leek" Underground Gasoline Tanks

Immediate shipments from well stocked warehouses in the East, West, North and South.

An
Electric
Sign



Will
Keep You
Busy

Mr. Garage Owner, They Can't Lose You, If—

you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

COMMONWEALTH EDISON COMPANY

Edison Building, 72 West Adams Street, CHICAGO

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Lake and Desplaines Streets, Chicago*

AMPECO PRODUCTS

Sell readily because their superiority
is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

**American
Machine
Products
Co.**

Marshall-
town,
Iowa



Fill Up Our Soldiers' Pipes

America's fighting men need tobacco to make trench life a little more comfortable. Here's a chance to treat the boys at the front.

"Our Boys In France Tobacco Fund" has been organized to furnish "smokes" for the American soldiers and sailors in active service.

All labor and administrative expenses are contributed so that every cent you give goes to pay for tobacco, which is purchased in large quantities at a low price.

One dollar buys four packages of tobacco and sends them to France. Each package, costing twenty-five cents, has a retail value of forty-five cents and keeps a man in "smokes" for a week. Every dollar sent to "Our Boys In France Tobacco Fund" buys a bundle of tobacco that would cost \$1.80 at your cigar store.

In every package is a post card addressed to a contributor to the tobacco fund. In accepting the package, the soldier or sailor agrees to send on the card a message to his benefactor in the United States. According to the plan, every person who gives a quarter gets his receipt from a fighting man in France.

The work of this fund is approved by the Secretary of War and the Secretary of the Navy.

Send as many dollars as you can spare. Write your name and address clearly.

"Our Boys In France Tobacco Fund"

25 West 44th Street, New York City

PASCO FEATURES

Deserve Your Careful Attention

Improved Method of Tangent Spoke Lacing that gives the strongest kind of resistance to lateral and radial thrusts, and yet yields the elasticity necessary for easy riding.

Ingenious Safety-Locking Device that absolutely prevents a wheel coming off a car in motion, no matter what the speed.

Indestructible Hub Cap, so sturdy and massive that the ordinary bangs and knocks of traffic leave it unscathed.

If you want to hear more about PASCO Wire Wheels, ask us to send literature. It will interest you.



FOR FORDS

Pleasure and Delivery Cars, set of 5 wheels complete, in black, **\$75.00.**

FOR MAXWELLS

Pleasure and Delivery Cars, set of 5 wheels complete, in black or white, **\$100.00.**

Other standard colors \$5.00 extra per set.

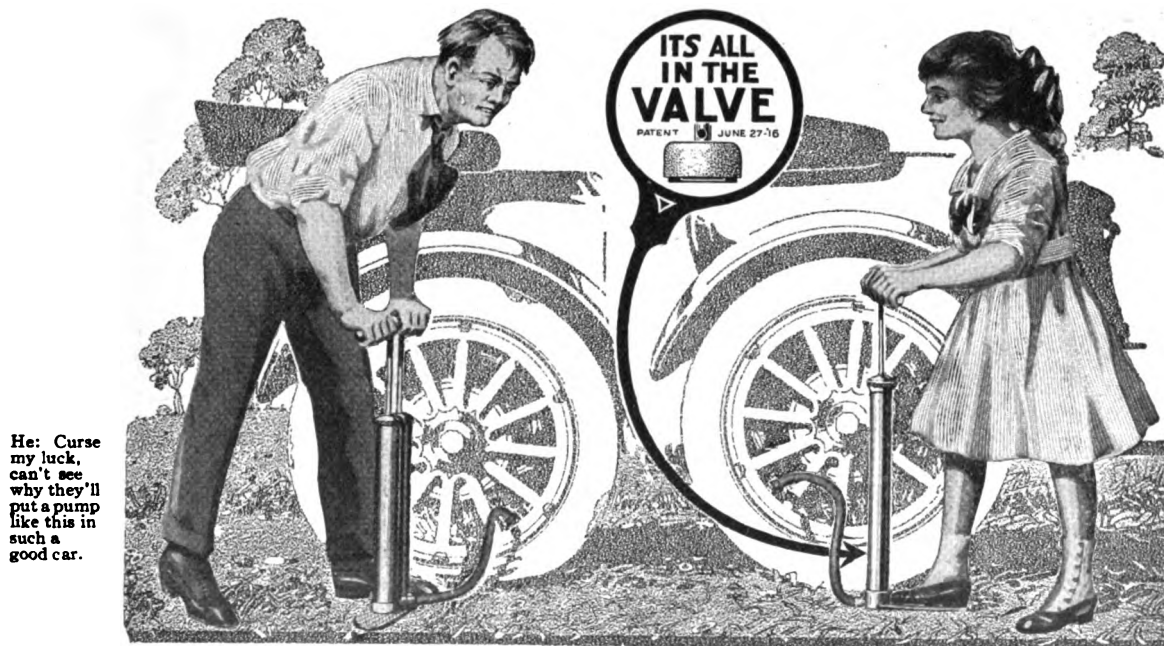
Dealers write for selling plan and discounts.

NATIONAL WIRE WHEEL WORKS, Inc.

Dept. G., GENEVA, N. Y.

Service Stations in all Principal Cities

DID IT EVER OCCUR TO YOU?



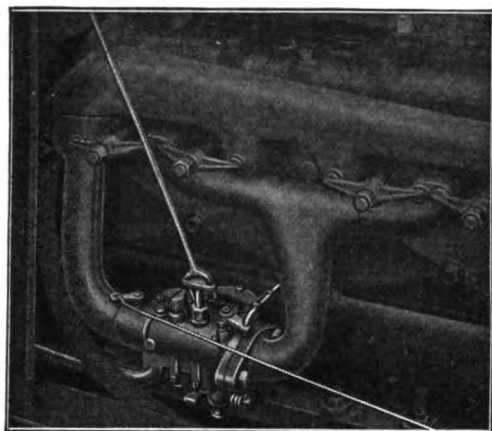
JOBBERs! DEALERs! USERs! More ROSE PUMPS actually purchased by dissatisfied users of out-of-date pumps last year than any other pump in existence. **There Is a Reason. Find Out Yourself. Write for a Sample.**

J. H. HANEY & COMPANY

HASTINGS, NEBRASKA

Manufacturers Rose Pumps, Grease Guns and Fan Belts

Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air.**

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.



MIDLOTHIAN TEXAS.



No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

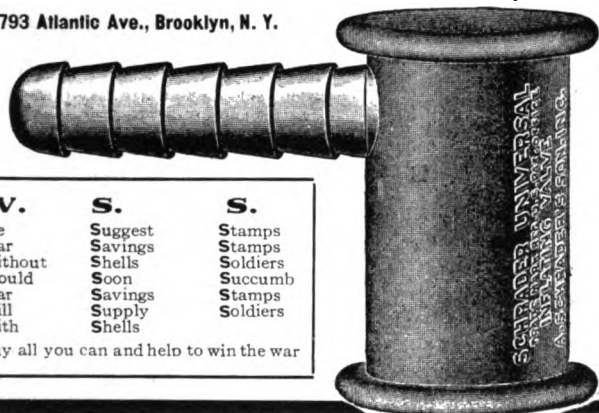
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{1}{2}$ inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

Any barrel is now a portable Self-Measuring Tank with the BOE Automatic OIL PUMP



No funnels. No waste. Only clean oil cleanly delivered. Fits any style 25 to 60 gallon steel or wood barrel. Measuring graduated to $\frac{1}{4}$ pint. Will pass state inspection.

Literature and prices on request.

H. M. BOE CO.

2416 University Ave., S. E.
MINNEAPOLIS, MINN.

GARAGE MEN AND AUTOMOBILE DEALERS — Stop That Money Leakage!



Mr Garage Owner and Automobile Dealer you should **KNOW** how you stand Financially!

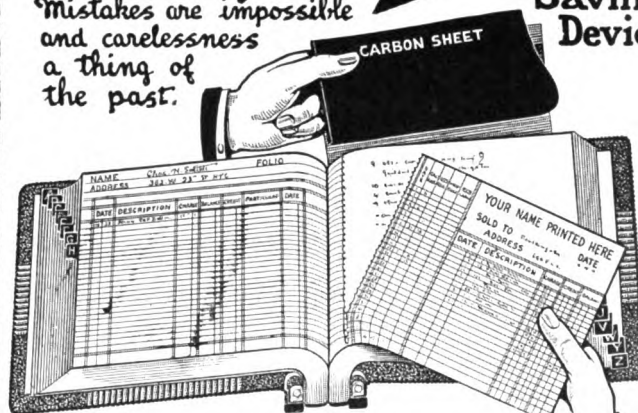
Are there Leaks in your book-keeping system?

WE GUARANTEE YOU THE UTMOST EFFICIENCY WITH OUR SPECIAL GARAGE BOOK-KEEPING PLAN

A COMPLETE CUSTOMER'S RECORD SYSTEM FOR GARAGE OWNERS AND AUTOMOBILE DEALERS.

The Harton System is being used by Garage Owners & Automobile Dealers everywhere — Mistakes are impossible and carelessness a thing of the past.

The Perfect Labor Saving Device



This Page is the Customer's Bill, the one underneath is your copy

A FEW REASONS WHY

- 1—When you make an entry, a bill and charge are made at the same time.
- 2—Simplified method of recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.
- 5—Statements ready at end of month for immediate mailing.

Send for Descriptive Folder Today—Use Coupon

Thos. J. Harton & Co. Inc.

LOOSE LEAF SPECIALISTS.

212 X Church St. NEW YORK.

Other HARTON Time and Money Savers

Accounting Record System.
Stock Record.
Repairing Outfit Forms.
Purchase Order System.
Workman's Time Tickets.
Repair Tickets.

Send Us the Coupon Today and We Will Mail Full Particulars Free.

Thos. J. Harton & Co., Inc.,
212 X Church St. New York
Send me FREE Descriptive Folder.
Name _____ Address _____

Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.

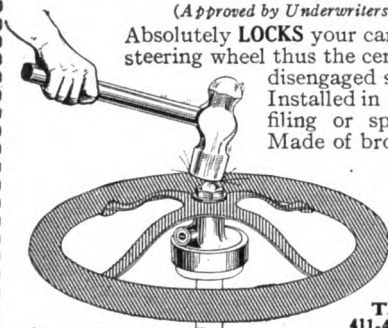


Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely **LOCKS** your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.



DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.

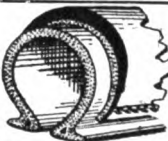
GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel** will put them back on the job.

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the McDaniel plant they are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the **SPECIAL McDANIEL DOUBLE TREAD PROCESS**. Your old tires are now made into one good tire ready to give you thousands of miles extra service.

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

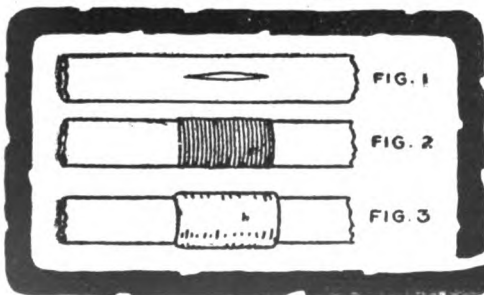
NOKORODE

Will repair any "hard job" in the garage

NOKORODE quickly stopped the leak in the pipe of a steam automobile as illustrated.

NOKORODE gets into the most inaccessible places—can be used on any kind of automobile work.

Every garage, repair shop, and service station should have a supply of NOKORODE.



For soldering efficiency or economy there is nothing to compare with it.

Small sample sent on request. For sale by leading jobbers.

THE M. W. DUNTON CO. PROVIDENCE, RHODE ISLAND, U. S. A.



Smooth as the flight of the birds



going North for the Summer is the progress of the Ford equipped with

W. & C. Shock Absorbers

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

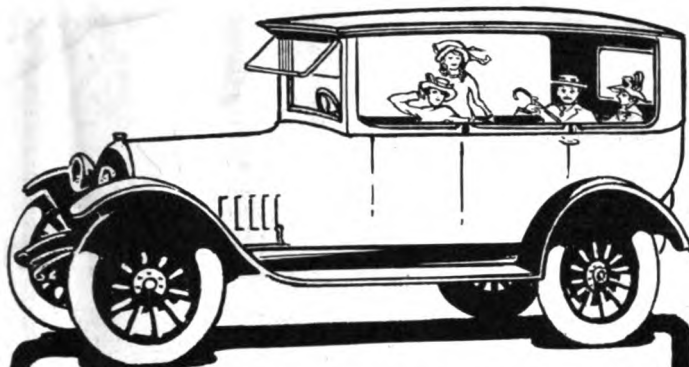
The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



YOUR CUSTOMERS will want this pump!

You have heard the old maxim, "The proof of the pudding is in the eating."

The Jensen Auto Tire Pump has maintained a standard for the past four years and is **proof** and has **proven** its wonderful merits time and time again.

JENSEN TIRE PUMP

Ninety pounds pressure with one-fourth the effort of the ordinary hand pump.

Sounds mighty good—don't it?

W.H.HOWELL CO.
Geneva, Ill. U.S.A.



Purchase one and get the **proof**.

Write for jobbers' and dealers' discounts.

Battery Charging Pays Big Profits

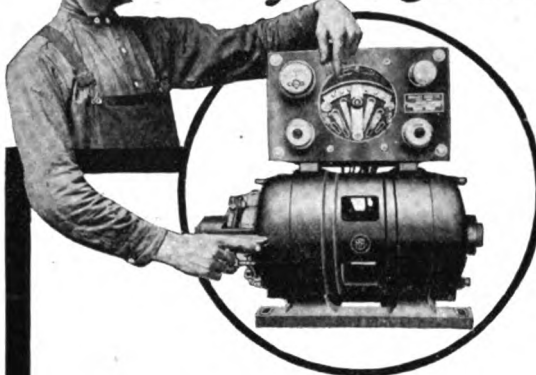


Figure it out for yourself! This HB 500-watt Battery Charger will recharge 1 to 7 batteries at a time. Current costs only 12c to 15c per battery. Autoists pay 75c to \$1.50. Your profit is 60c to \$1.35 on every battery you charge. HB Users are making from \$40 to \$60 **clear profit every month**, and with more last year's cars in use and more batteries to be recharged, **earnings are increasing all the time**.

\$15 Puts This Money-Maker in Your Garage

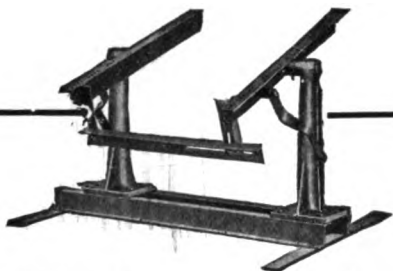
Balance in 9 monthly payments of \$20 each, which earnings should easily more than pay. Tear out this ad and send it with name for full particulars or send initial payment of \$15 with trial order. Under **absolute money-back guarantee**, you run no risk.

Put in an HB Charger. You can operate it easily from your city current or engine, without any electrical or mechanical experience, and it means **big profits quickly made**. Don't put it off. Order from this ad. Write or wire us today.

Hobart Brothers Company

Box G4

Troy, Ohio



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer **MONOGRAM OIL**.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

**Monogram Users are
Quality Choosers.**

**NEW YORK LUBRICATING
OIL CO.**

**NEW YORK CITY
and CHICAGO**

Branches in Principal Cities



Connect it to a gas pipe and its ready for instant use

Moreover, it does not require a forced air blast to produce the 1800 degrees F. temperature which is secured. Ordinary city, or natural gas suffices.

JOHNSON #118 BENCH FURNACE

is specially designed for garage and repair shops

This furnace will heat-treat many carbon steel tools; will melt 20 lbs. of soft metal at a time; heat soldering irons up to 14 lbs. to the pair; or can be used for bending and straightening rods, axles, etc.

An all around useful worker!

For sale at an attractive price!

THE JOHNSON GAS APPLIANCE COMPANY
CEDAR RAPIDS . . . IOWA



HOLMES WRECKING TRUCK

Be prepared for "wrecked car" business : its profitable.

The profit you make on "towing in" jobs depends on the time and labor consumed.

The HOLMES WRECKING TRUCK reduces this time and labor to a minimum.

Use the truck as a lever to raise the wrecked car, then put under either axle and you can bring in any sized car quickly and easily. It enables you to give the kind of service that builds business.

Hundreds of garages are using it.

Very strongly built—frame and wheels of malleable iron castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price \$50. Discounts to garages and dealers.

ROBT. HOLMES & BROS. :: DANVILLE ILLINOIS



WILLARD SUPER HEATER

A great saving for the car owner. Big Profits for You

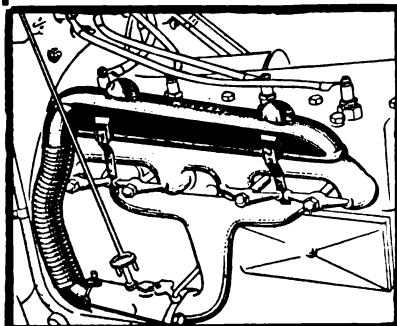
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



Retail Price, \$5.00

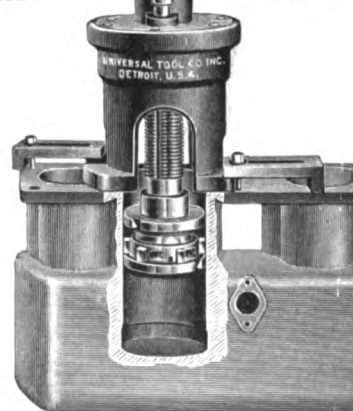
DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana

THE IMPROVED UNIVERSAL

CYLINDER REBORING TOOL



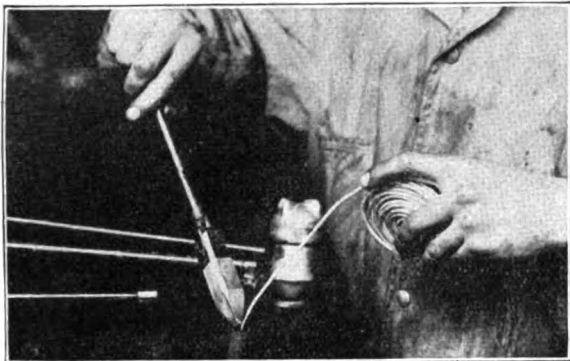
Cylinder Reboring is expert work, which builds up a trade of satisfied customers, and in many cases the only remedy for lost power.

THE IMPROVED UNIVERSAL CYLINDER REBORING TOOL is simple to operate and bores perfectly round and smooth. Adjustable from 2 1/2" to 5 1/16".

You can make liberal profits if you are equipped for this work.

For Sale by Your Jobber Write for Catalog No. 10

THE UNIVERSAL TOOL CO., INC.
DETROIT, MICH. U. S. A.



KESTER CRYSTAL CORE WIRE SOLDER

is the handiest solder to use for automobile work and general repair work. Take, for instance, this radiator job.

Because it is made in convenient wire form, it can be used in any place. Does its work efficiently. Ready to use. No additional flux or acid required. Sold in one pound coils, and in one, five and ten pound spools.

Order From Your Jobber

CHICAGO SOLDER CO.
CHICAGO, ILL.
U.S.A.



GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

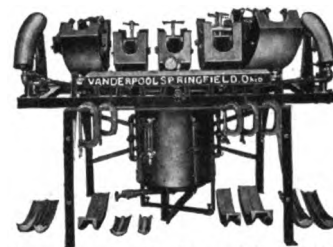
Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company
1002 Washington Boulevard
Chicago, Illinois



Big Profits in Vulcanizing with a VANDERPOOL!

When tires are high priced as they are now, every motorist is anxious to secure the greatest possible mileage—in other words, now is the time to start in the vulcanizing business, or now is the time to install the most efficient kind of a vulcanizer.



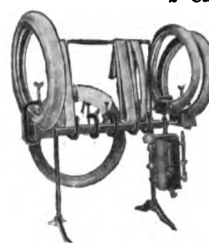
Vanderpool 5 Cavity and Retreading with Read Mold and long Air Bag or Cores



Vanderpool 3 Cavity



Vanderpool 2 Cavity



Vanderpool Model A 1 A

Every day which you defer buying a Vanderpool, means lost profits. The Vanderpool vulcanizer does perfect work, thoroughly and durably, at small cost. Requires very little floor space, and no experience to operate.

Out of the profits of your vulcanizing, you can soon pay for your Vanderpool. Pay for it while you use it.

Let us send you a copy of our illustrated catalogue.

VANDERPOOL COMPANY

Springfield - Ohio



The PANVAR Way for a lasting finish

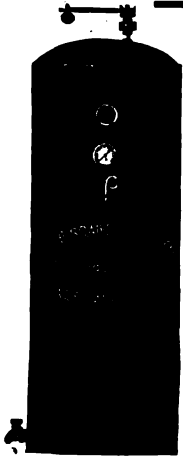
Panvar dries over night and gives a hard, glossy and lasting lustre to your car. Unlike varnish, Panvar is a quick self-leveling fluid which can be quickly applied by any one. Only \$1.50 worth of Panvar is required to re-finish a car.

Dealers and Garages

There is a big sale of Panvar possible in your territory. Garagemen can re-finish their customer's car over night.

Free sample of Panvar sent upon receipt of 10 cents to cover postage. Get this sample and see for yourself.

THE PANVAR COMPANY
602 Bulletin Bldg. Philadelphia, Pa.



GARAGE AIR TANKS

Scaife Copper-Braced Tanks will hold air indefinitely without loss of pressure.

Copper-Braced Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.

Elgin Six

Chicago-Built Motor Cars

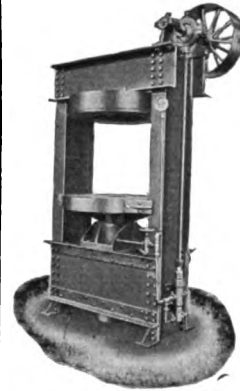
5-Passenger Touring **\$1,095** 4-Passenger Roadster

All-Weather Sedan **\$1,645**

Military Scout Model **\$1,195**

Every Elgin Six Combines Distinction, Endurance, Economy and Comfort.

Elgin Motor Car Corporation, 2427 South Michigan Blvd. Chicago, Ill.



Tire Applying Press

Hydraulic Arbor Presses

work easier than any others

We make many sizes for many purposes.



WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS



PISTON RINGS

Put Energy In Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.
KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.

"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar Stock and are Heat Treated. For

STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price **\$1.25**



Graham Roller Bearing Co., Coudersport, Pa.

Do You Get Your Share of This Business?

If you can repair and adjust Electrical Starting and Lighting Equipment, you will get the cream of the garage business. With the increasing demand for this sort of service, you must equip to handle the business or lose it.

Weston

Model 280
GARAGE TESTING INSTRUMENT

is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*

Weston Electrical Instrument Co., 30 Weston Ave., Newark, N. J.

23 Branch Offices in the Larger Cities



REVOLVING CASES!

Especially designed for garages and service stations

are the only satisfactory way of keeping your repair parts, such as bolts, screws, cotter pins, ball bearings, etc. You can find them instantly and they are protected from dust, rust, etc.

Made in many sizes of best grade materials.

Write for Catalog

AMERICAN BOLT & SCREW CASE CO.
DAYTON, OHIO.



SPRINGS IN STOCK FOR ALL CARS

90,000 Springs.

588 Types.

6—FACTORY BRANCHES—6

St. Louis, Mo. 1402 Chestnut St. Minneapolis, Minn. 1024 Hennepin Ave
Reading, Pa. 538 Franklin St. Dallas, Tex. 209 Houston St.
Sumter, S. C. 29 Caldwell St. Richmond, Ind. Colonial Bldg.

FACTORY RICHMOND, IND.

JENKINS VULCAN SPRING CO.

Abide by the President's Message and Conserve Your Nation's Resources



Bale Your Waste Paper—Don't Burn It—Baled Paper is worth real money. Keeps your place clean, sanitary, and the Safety-First All Steel Balers are Fire-proof. Prices from \$32.50 up. Write for circulars.

CHICAGO BALING PRESS COMPANY
395 South La Salle Street, CHICAGO, ILL.



\$60.

Complete with triple gear attachment (as shown).

\$50.

Less triple gear attachments.

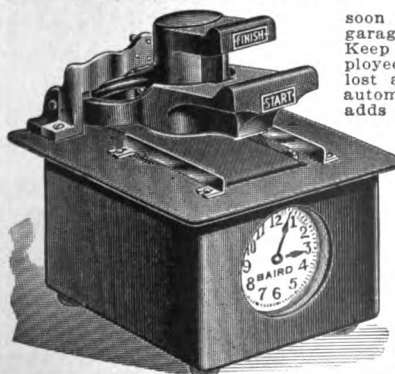
**WILSON'S
FORD
TRANSMISSION
BUSHING REAMING
MACHINE**

The only machine or tool made that will ream bushings in all three drums and triple gears absolutely true to a perfect fit and alignment. 2 minutes labor required to set up and ream one bushing. 25 minutes to completely overhaul a transmission better than you ever did it before. Every job uniform. Saves 75% of LABOR COSTS.

Send for Special Circular of Other Time Saving Tools

K. R. WILSON, 1018 Main Street, BUFFALO, N. Y.

BAIRD TIMING DEVICES



soon pay for themselves in garages and repair shops. Keep a check on your employees' time. A few minutes lost a day through lack of automatic supervision soon adds up into a heavy loss.

Keep track of your repair work. Know how much time each job takes and get your repair charges on a correct and profitable basis.

Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today.

Interesting booklets free!

Baird Equipment Co.
324 W. Ohio St., Chicago
Phone, Superior 2071

DETROIT DETACHABLE WEATHERPROOF TOP

Recognized as the leader in quality, and manufactured by the largest independent top manufactory in the world. A splendid all-season sales proposition, in strong demand by Chevrolet, Hudson, Ford and Maxwell owners.

The big sales totals and profits hung up by Detroit Weatherproof Body Company Dealers are the talk of many towns. YOU can get information about profit possibilities by writing.

DETROIT WEATHERPROOF BODY COMPANY,
PONTIAC, MICH.

The Garage and Shop Market Place

SAVE ON ALL AUTO PARTS

The greatest stock in the Middle West. All parts of all standard makes. Quick service. Great volume makes it possible to sell to you for—

50 to 75% Less

than NEW PARTS would cost. Only the best parts sold and backed by an iron-clad guarantee.

Our Guarantee: Absolute satisfaction or money cheerfully refunded. For instant service on parts, write, phone or wire—

Auto Wrecking Co. "We Tear 'Em Up and Sell the Pieces"

13th and Oak Kansas City, Mo.

GUARANTEED PARTS

"You must be satisfied," is our motto.

READ THIS GUARANTEE:

Any article purchased from us which does not, in your opinion, give satisfaction or fit, can be returned to us and your money will cheerfully be refunded.

50% to 75% less

We save you money

ORDERS SHIPPED THE DAY RECEIVED

Write us your wants

AUTO SALVAGE COMPANY, Inc.

The Originators of the Auto Salvage Business
17th and Main Sts., KANSAS CITY, MO.
2823-28 Locust St., ST. LOUIS, MO.
314-315 E. 3rd St., CINCINNATI, OHIO

RADIATORS MADE AND REPAIRED

Ship your Radiator to us today and get it back in 24 hours.

Written guarantee with every job.

Detroit Auto Radiator Co.

180 Fifth Street Milwaukee, Wis.

SCORED CYLINDERS

Repaired by Patented Process. Fused with our silver-nickel alloy. (Eliminates Grinding.) No warping. Same pistons fit. Reshipped 24 hours after received.

L. LAWRENCE & CO.

Plants at
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Detroit—1246 E. Jefferson Ave.
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PISTON PINS

Standard and Oversize

PISTONS

Standard Cast and Light Weight Semi Cast Iron for All Makes.

Cylinder Regrinding
Get Our Prices

Butler Mfg. Co.

1120 E. Georgia St.
INDIANAPOLIS, INDIANA

CYLINDER GRINDING

GEAR CUTTING

Magnalium and Tractor Pistons

We are the Pioneers in this line and have

OVER 500 PISTON PATTERNS

The Best Equipped Shop in the Northwest
for this line of work

WE ALSO BUILD "CAPITOL" MARINE MOTORS

AUTO ENGINE WORKS
ST. PAUL MINN.

LEARN THE AUTOMOBILE BUSINESS

We teach you construction, repairing and driving in 6 to 8 weeks. Special instruction in Acetylene Welding, Knight Engine, Vulcanizing, Electric Starters, Automobile Salesmanship. Greer graduates always in demand. Earn \$150 per month and up.

Courses \$15, \$35, \$50, \$65 and \$150
Booklet "How to Succeed in the Automobile Business"—FREE. Write today.

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1519 S. Wabash Ave. Chicago, Ill.

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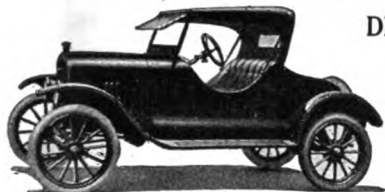
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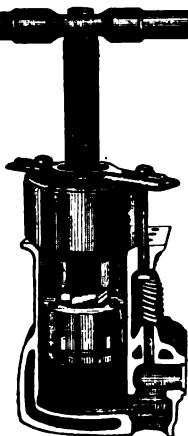
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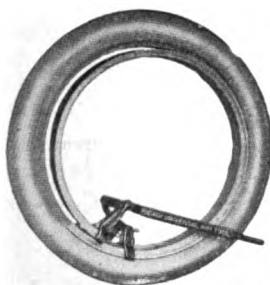
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Olympian Motors Co., Pontiac, Mich.
Pan Motor Co., St. Cloud, Minn.
Regal Motor Car Co., Detroit.

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Bearings Service Co., Detroit, Mich.
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Hobart Bros., Troy, Ohio.

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Master Body Co., Detroit.

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American Bolt & Screw Case Co., Dayton, Ohio.

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Adams & Elting Co., 716-26 Washington Blvd., Chicago.

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National Cash Register Co., Dayton, O.

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States Chemical Co., 680 W. Austin Ave., Chicago.

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Dearborn Motor Truck Co., Chicago, Ill.
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Storm Mfg. Co., Thompson, Iowa.
Universal Tool Co., 632 Dime Bank Bldg., Detroit.

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ENGINES

Auto Engine Wks., St. Paul.

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Master Body Co., 570 Franklin St., Detroit.

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Thomas J. Harton & Co., Inc., 212 Church St., New York.

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Romort Mfg. Co., Oakfield, Wis.
United Engine & Mfg. Co., Hanover, Pa.
Universal Industrial Corp., Hackensack, N. J.
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Zinke Co., The, 1323 So. Michigan Ave., Chicago.

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Johnson Gas Appliance Co., Cedar Rapids, Ia.

GASOLINE STORAGE AND PUMPING SYSTEMS

The American Oil Pump & Tank Co., Cincinnati, Ohio.
Groetken Pump Co., Aurora, Ill.
Guarantee Liquid Measure Co., Farmers Bank Bldg., Pittsburgh.
Milwaukee Tank Works, Milwaukee, Wis.
Wm. B. Scaife & Sons Co., Pittsburgh, Pa.
Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

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The American Oil Pump & Tank Co., Cincinnati, Ohio.
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Willard Company, South Bend, Ind.

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Louise Mfg. Co., Springfield, Ill.

LATHES

Marvel Machinery Co., Boston Block, Minneapolis, Minn.

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New York Lubricating Oil Co., New York City.
Standard Oil Co. (Indiana), Chicago, Ill.

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Firestone Sales Co., 1806 Michigan Ave., Chicago.

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Groetken Pump Co., Aurora, Ill.
Milwaukee Tank Works, Milwaukee, Wis.
Wm. B. Scaife & Sons, Oakmont, Pa.

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Chicago Baling Press Co., 305 S. La Salle St., Chicago.

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Edw. A. Cassidy Co., Inc., Madison Ave. at 40th St., New York City.

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American Machine Products Co., Marshalltown, Iowa.

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Burd High Compression Ring Co., Rockford, Ill.
Butler Mfg. Co., Indianapolis, Ind.
Inland Machine Works, 817 Mount St., St. Louis.
Keys Piston Ring Co., 3008 Olive St., St. Louis.
Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.

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The W. H. Howell Co., 10 State St., Geneva, Ill. (Jensen Tire Pump.)
J. H. Haney & Co., Hastings, Neb.

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Detroit Auto Radiator Co., 180 Fifth St., Milwaukee, Wis.

REFINISHERS

Panvar Co., 602 Bulletin Bldg., Philadelphia

RIM TOOLS

Greb Co., The, 194 State St., Boston.
F. H. Lawson Co., The, Cincinnati, Ohio.

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Phillip H. Webber & Co., Hoopston, Ill. (W & C.)

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Commonwealth Edison Co., 72 W. Adams St., Chicago, Ill. (Federal Electric Signs.)
Federal Sign System, Lake & Desplaines Sts., Chicago.
Flexlume Sign Co., Niagara St., Buffalo, N. Y.

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Chicago Solder Co., 218 No. Union Ave., Chicago, Ill.

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M. W. Dunton Company, Providence, R. I.

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American Auto Products Co., 1120 So. Michigan Ave., Chicago.
Auto Spring Repair Co., 1331 Jackson Blvd., Chicago.
Garden City Spring Works, 2300 Archer Ave., Chicago.
Harvey Spring & Forging Co., Racine, Wis.
Jenkins Vulcan Spring Co., 1403 Chestnut St., St. Louis.

STARTERS

Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

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American Oil Pump & Tank Co., Cincinnati, Ohio.
Milwaukee Tank Works, Milwaukee, Wis.
Wm. B. Scaife & Sons, Oakmont, Pa.
Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

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Automatic Time Stamp Co., 161 Congress St., Boston.
Bird Equipment Co., 324 W. Ohio St., Chicago.

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Romort Mfg. Co., Seattle, Wash.

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C. A. Shaler Co., 353 Fourth St., Waupun, Wis.
Vanderpool Vulcanizing Co., Springfield, Ohio.

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Firestone Sales Co., 1806 Michigan Ave., Chicago.

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Bermo Supply Co., Omaha, Neb.
St. Paul Welding & Mfg. Co., 173 W. 3rd St., St. Paul, Minn.
Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		I	
Accurate System & Manifold- ing Co.	61	Imperial Brass Mfg. Co.	—
Acme Demountable Wheel Co.	—	Inland Machine Works.	7
Adams & Elting.	43	Iowa Novelty & Brass Wks.	52
Advance Automobile Accessor- ies Corp.	62	J	
American Bolt & Screw Case Co.	57	Jenkins Vulcan Spring Co.	57
American Machine Products Co.	48	Johnson Gas Appliance Co.	54
American Oil Pump & Tank Co., The.	45	K	
American Technical Society.	43	Kamlee Co., The.	59
Aske Automatic Voltage Regu- lator Co.	—	Kennedy Car Liner & Bag Co.	59
Atlas Auto Supply Co.	—	Keys Piston Ring Co.	56
Auto Cape Top Co.	58	L	
Auto Engine Works.	58	Lawrence & Co., L.	58
Auto Salvage Co.	58	Lawson Co., The F. H.	41
Auto Spring Repair Co.	59	Lenthe, L. E.	—
Auto Wrecking Co.	58	Lourie Mfg. Co.	56
B		M	
Baird Equipment Co.	57	McDaniel Rubber Co., Leo.	52
Bearings Service Co.	35	Marvel Carburettor Co.	50
Bermo Co., A. J.	59	Marvel Machinery Co.	—
Boe Co., H. M.	51	Martin Rocking Fifth Wheel Co.	—
Breco Electric Co.	45	Master Body Co.	59
Brunner Mfg. Co.	33	Miami Trailer Co.	6
Butler Mfg. Co.	58	Milwaukee Tank Works.	47
C		Motor Accessories Corp.	10
Cassidy Co., Edward A.	—	N	
.....Inside Front Cover	—	National Cash Register Co.	37
Catelain, Andre G.	58	National Rubber Filler Co.	50
Chicago Baling Press Co.	57	National Wire Wheel Works.	49
Chicago Solder Co.	55	New York Lubricating Oil Co.	53
Commonwealth Edison Co.	48	Norma Company of America, The.	9
D		O	
Defender Auto Lock Co.	5	Olympian-Motors Co.	61
Detroit Auto Radiator Co.	58	P	
Detroit Weatherproof Body Co.	57	Pan Motor Co.	—
Dunton Co., M. W.	52	Panvar Co.	55
E		Pondelick Bros.	56
Elgin Motor Car Corp.	56	Pruyn Ball Bearing Works.	61
Ewald Novelty Works.	—	R	
F		Regal Motor Car Co.	—
Federal Sign System (Electric)	48	Reliance Co.	52
Elrestone Sales Co.	3	Romort Mfg. Co.	39
Flexlume Sign Co.	Back Cover	Ross-Gould.	—
G		S	
Ganschow Co., William.	55	St. Paul Welding & Mfg. Co.	58
Garden City Spring Works.	59	Seale & Sons Co., Wm. B.	56
Globe Mfg. Co.	47	Schaler Co., C. A.	Front Cover
Graham Roller Bearing Co., The.	56	Schrader's Son, Inc., A.	51
Greb Co., The.	59	Security Auto Lock Co.	—
Greer College of Motoring.	58	Simplicity Wheel Co.	41
Groetken Pump Co.	59	Standard Electric Lamp Wks.	—
Guarantee Liquid Measure Co.	4	Standard Oil Co. of Indiana.	—
H		States Chemical Co.	Inside Back Cover
Haney & Co., J. H.	49	Sterling Engine Co.	58
Harton & Co., Inc., Thos. J.	51	Storm Mfg. Co.	59
Harvey Spring & Forging Co.	31	Sunderland Machinery & Sup- ply Co.	58
Hobart Bros.	53	U	
Holmes & Bros., Inc., Robert.	54	United Engine & Mfg. Co.	58
Howell Co., The W. H.	53	Universal Battery Co.	—
Hughes & Co., D. C.	—	Universal Industrial Corp.	59
		Universal Tool Co.	54
		V	
		Vanderpool Vulcanizing Co.	55
		Visible Gasoline Dispenser Co.	8
		W	
		Warshawsky & Co.	58
		Webber & Co., P. H.	52
		Weston Electrical Instrument Co.	57
		Wiggins, J. B., Co.	—
		Willard Co., The.	54
		Wilson, K. R.	57
		Z	
		Zinke Co.	39

The New OLYMPIAN

4 cylinder, valve-in-head, 5 passenger Touring Car

\$1085

f. o. b. factory

OLYMPIAN MOTORS COMPANY, Pontiac, Michigan

This Bookkeeping System Saves You One-Half Your Work on Charge Accounts

and it will save you many mistakes, losses and disputed accounts. A large number of successful **Garages, Repair Shops and Accessory Dealers** are now using the

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One entry does all your bookkeeping, day book, journal and monthly statements. A final entry at close of month completes your ledger record.

It's simple, requires no experts, as a matter of fact, you can be your own bookkeeper with our system.

The System is Self-Indexing. Get that—S-E-L-F I-N-D-E-X-I-N-G. You do not have to "hunt and hunt" for an account.

Send for Free Sample

We have just completed a miniature "AKKURATE" System that shows in detail the short-cut, efficient and money-saving plan. Write for a copy and see how it will help you.

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Accurate System & Manifold Co., Inc.
12 Elm Street New York City



Ford Set of 12 American Hammered Piston Rings \$7.50

Oversize Set \$8.70

One-Piece, Concentric, Leak Tight, "American" Rings are *Hammered* to test the individual castings and give them permanent tension and perfect compression. Sizes to fit any motor.

"Hammered" Piston Ring Co. of America
1919 Michigan Avenue, Chicago, Ill.

35% Discount with the return of this ad.

Single Row Double Row REGROUND BALL BEARINGS NEW

We will duplicate your worn bearings with reground ones immediately in exchange from stock

Steel Balls Thrust Bearings
Straight or Taper Roller Bearings Replaced
With New Ones

QUALITY **PRUYN** SERVICE
BALL BEARING WORKS
1919 Michigan Avenue Chicago
Taper Roller Bearings for Ford Front Wheels

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\$3.00
per set of
three



CORK INSERT

The Only Transmission Lining that

Stops Ford Chattering

—stops chattering not only when the lining is new, but *throughout* service that averages *three times* as long as other linings.

Cork Inserts stop the chatter because they *grip* positively at the slightest pressure on the pedal and *hold*. They end the vigorous vibration that racks the car, causes rear end trouble and repair expense.

ADVANCE

CORK INSERT

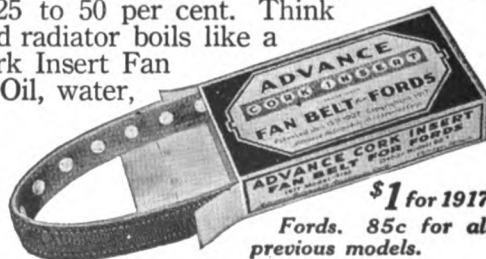
TRANSMISSION LININGS FOR FORDS

In a class by itself! Its co-efficient of friction is far in excess of any other lining. Makes the Ford act like a high priced car. That jerky get-away—that lurch into reverse—that vigorous jumping up and down under the brake—all disappear—disappear never to return—for Cork Insert Lining *never loses its grip*. The corks never get hard or surfaced, never lose their resiliency. They hold their place in the fabric throughout the long wear and do their work to the very last.

Cork Insert Fan Belts Stop Slip — Keep Engine Cool

—because the fan is kept fanning. The ordinary fan belt used with Fords gets slippery after a little use. The slipping, it is estimated, runs as high as 25 to 50 per cent. Think of it! No wonder the Ford radiator boils like a tea kettle. The cork in Cork Insert Fan Belts eliminates slipping. Oil, water, grease, dirt, heat, friction, do not affect them.

They hold their ability to grip throughout their extra long service.



Advance Automobile Accessories Corporation

Dept. D7-1, 56 East Randolph Street, Chicago, Illinois

Makers also of CORK INSERT BRAKE LININGS—the NO-SLIP, SAFETY-SURE
brake lining for ALL CARS

A TRADE BUILDER

BIG
CAN



27 oz.
25c

CLEANS EVERYTHING

THAT'S WHY EVERYBODY NEEDS

SPEED-DEE

APPEALS TO ALL CLASSES OF TRADE WITH
ITS THOUSAND DIFFERENT USES--MAKES
GOOD FOR YOU AND YOUR CUSTOMERS

BIG PROFIT

ORDER FROM YOUR JOBBER IN TIME FOR THE
Big Spring Clean-Up Demand

WRITE FOR FULL PARTICULARS AND SELLING HELPS

MANUFACTURERS

STATES CHEMICAL CO.

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CHICAGO, U. S. A.



Why Not Let The Car Makers Buy This Sign For You?

In this interchangeable Flexlume Oplex Sign each letter is a unit—you can pull them out and stick in a new set of letters—it only takes a few minutes.

What does this mean to the automobile sales agent?

It means that he can give up one line of cars and take on another without spoiling the value of his sign—just get letters to make the new name, that's all.

It means he can change the sign as often as he likes in order to advertise the hundred and one things he may wish to push.

It means that with the co-operation of his car makers he can get a splendid sign at very low cost—if you buy the frame, almost any manufacturers will be glad to pay for the letters to make up their own names. Try them and see if they won't.

And when you get one of these signs you get the same distinctive sign value that has made Flexlume Oplex signs known everywhere, the same raised, white letters on a dark background, the same artistic designs, the same splendid daytime effect, the same intense brilliance when the sign is illuminated.

FLEXLUME SIGN CO., Buffalo, N. Y.

Please send me free sketch and information in regard to Flexlume Signs.

Signs should read, illuminated.....

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Wording not illuminated.....

To read one or two sides?.....

Vertical or horizontal?.....

NAME

ADDRESS

A. G. & A. D.

Write today for details, prices and a sketch showing a sign particularly suited to your needs.

Be sure you mention what letters you want interchangeable or illuminated.

Bear in mind that the cost of the sign will depend upon the size and number of illuminated letters used.

THE FLEXLUME SIGN CO.

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Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.

Pacific Coast Distributors: Electrical Products Corporation,
941 West 16th St., Los Angeles, Cal.

AMERICAN GARAGE & AUTO DEALER



Volume 9
Number 5

CHICAGO

MAY, 1918

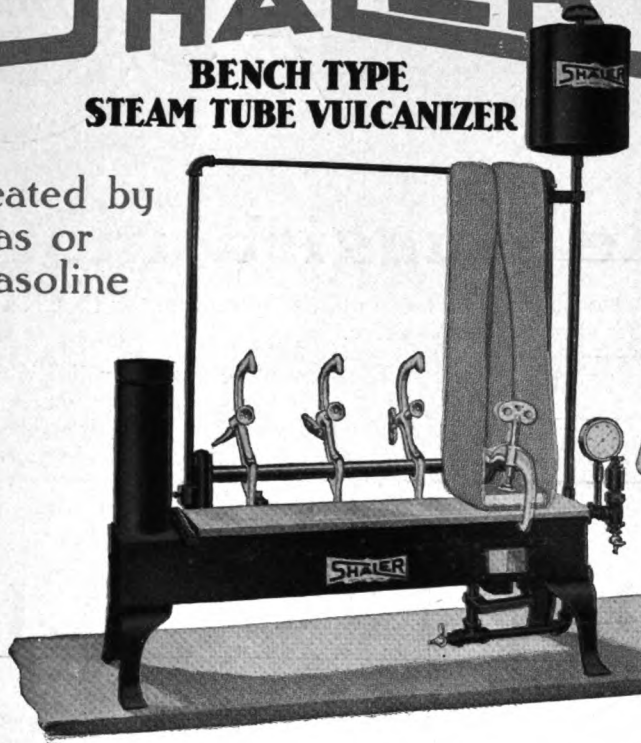
\$1.00 Per
Year

Type
"L-40"

SHALER

**BENCH TYPE
STEAM TUBE VULCANIZER**

Heated by
Gas or
Gasoline



Price \$35.00
(Subject to
Trade Discount)



Will Pay for Itself in a Week

This SHALER Tube Vulcanizer is the most popular vulcanizer ever put on the market. Thousands of them are in use in Garages and Repair Shops, and many of them have more than paid for themselves the *very first day* they were used!

You can do every kind of tube repairing with this vulcanizer, just as well as with the most expensive machines costing many times as much.

It repairs four tubes *at one time*—and vulcanizes perfectly any size or shape of puncture or cut up to two feet in length. There is no vulcanizer made that will turn out better work or do it more quickly—why think of paying a big price for a vulcanizer that will do no more than this practical SHALER Tube Vulcanizer!

Easy to Operate—Automatic Heat Control—SAFE!

Even a boy can make perfect repairs with this vulcanizer. You don't need experience. Your ordinary garage help can repair any size or kind of inner tube—and make a perfect job of it.

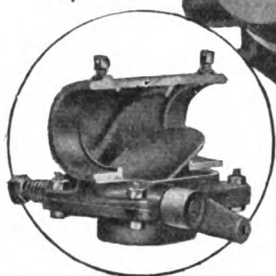
The SHALER Vulcanizer is the only one that has automatic heat control. Requires no watching or regulating, yet there is no danger of overheating tubes or undercuring the rubber. Takes up very little room in your garage or repair shop—it can be placed on any work bench and moved about at will. This vulcanizer uses little fuel—is furnished with either gas or gasoline burner—or both can be had if desired.

All Jobbers Sell This Popular Outfit

Ask your jobber now for complete information about SHALER Bench Tube Vulcanizers—or send to us for the new SHALER Catalog of Shop Vulcanizers. Investigate—but do it NOW!

C. A. Shaler Company, 355 Fourth Street, Waupun, Wisconsin
Oldest and Largest Manufacturers of Vulcanizers

Sectional view,
showing pat-
ented gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

Show up the sluggish motor

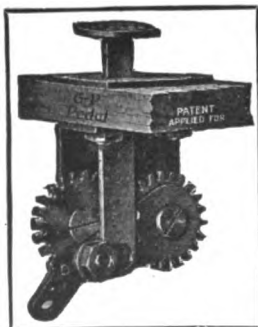
If one of your cylinders lays down, do you know it? Can you tell before the motor starts skipping? If you can't you may be losing power. Power is costly. Let the G-P Muffler Cut-Out be your mechanical ear.

It will intensify the purr of the motor and expose the lazy cylinder. Before the loss gets serious you can check it. It will give you a

sweet-running, powerful motor that is a pleasure to drive.

Built so that complete cooling relief is quickly given to the motor. Exhausts gases freely and without possibility of back-pressure. Carbon will not accumulate. Made in two parts. Easy to inspect. Your motor can't go wrong without your knowledge.

The G-P MUFFLER CUT-OUT and G-P PEDAL



The G-P Pedal is made entirely of steel, and is strong enough to operate any cut-out spring. The geared compound leverage makes it easy to operate.

Compounding of leverage and geared parts allows installation in minimum space. Its installation requires but one small hole

drilled in floor board. The locking device is on the bottom plate, so the pedal can be fastened to a steel or wood floor board of any thickness without altering its throw.

By releasing one screw the G-P Pedal can be changed to lift or pull in any direction. Operates any cut-out easily.

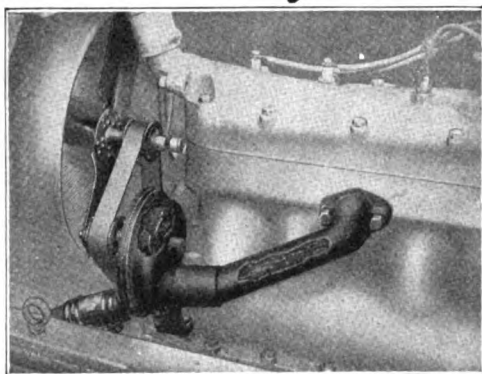


Sales Department

EDWARD A. CASSIDY CO., Inc., 280 MADISON AVENUE
NEW YORK CITY

Manufacturers: The G. Piel Company, Inc., Long Island City, N. Y.

You'll have no dull days if you sell FIRESTONE ACCESSORIES!



FIRESTONE FORD CIRCULATOR

For Ford cars, tractors, or trucks. We guarantee this centrifugal circulator to keep the motor so cool that you can lay your hand on the radiator after running several hours idle. Saves its small cost to the car owner in lubricating oil alone.

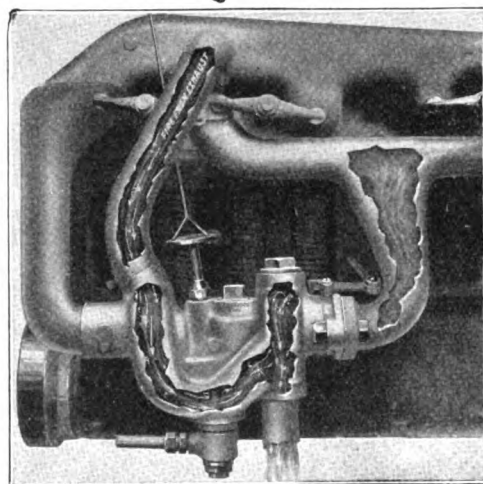
Eliminates the pounding from the motor and decreases carbon trouble.

Easily installed on any Ford.

Retail price, \$9.00.

Liberal profit to dealers.

Firestone Sales Company
1806 Michigan Ave.
Chicago, Ill.



GILSON FIRESTONE CARBURETOR 31 Miles Per Gallon

Adds many times its cost to the value of any car. This carburetor burns kerosene better than any other carburetor burns gasoline. It also will burn kerosene, distillate or gasoline without any readjustments.

Price Complete, Ready to Install, Carburetor for Gasoline only, \$18.00.

Carburetor for Kerosene (coal oil), including extra tank and water circulator, \$30.00.

A big seller for the trade.

DEALERS—Send in this Coupon today.

Firestone Sales Co., Date.....
1806 Michigan Ave., Chicago, Ill.

Please send me literature, dealers' discounts and sales plan on the

Firestone Ford Circulator.
Gilson Firestone Carburetor.

Name

Address

City....., State.....



500
MIAMI
TRAILERS
for U.S.
Govt.

Texas
Dealers
sold
1000 MIAMI
TRAILERS
in 1917

Georgia
Dealer
sold 51 MIAMI
TRAILERS
in
30 days

→ These are the
kind of orders we get
for MIAMI TRAILERS

Not only are they very frequently, large fleet orders, but MIAMI TRAILERS are sold to almost every line of business. There is hardly a firm in your city which cannot profitably use MIAMI TRAILERS.

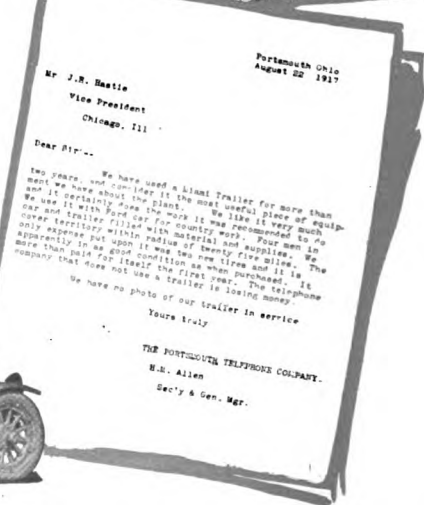
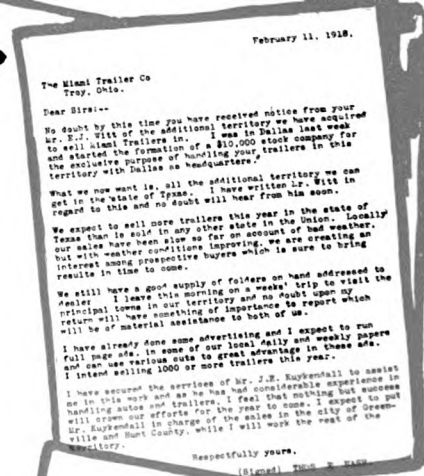
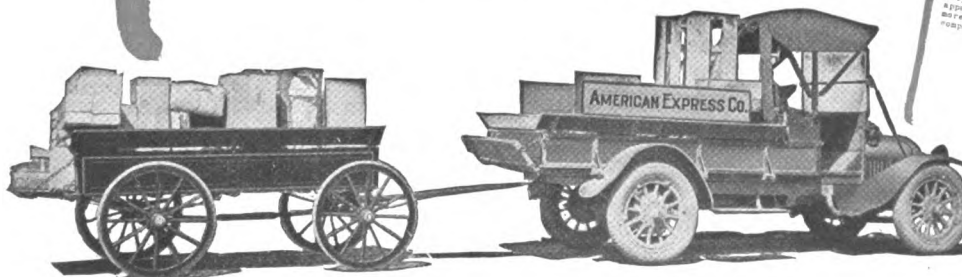
These are the kind
of letters we get from
MIAMI TRAILER
users and dealers →

Read them carefully! Facts speak for themselves. MIAMI TRAILERS not only deliver satisfaction, but they deliver anything, anywhere, at any time. Make a motor truck or automobile doubly efficient. Made in a number of styles at prices varying within reach of all.

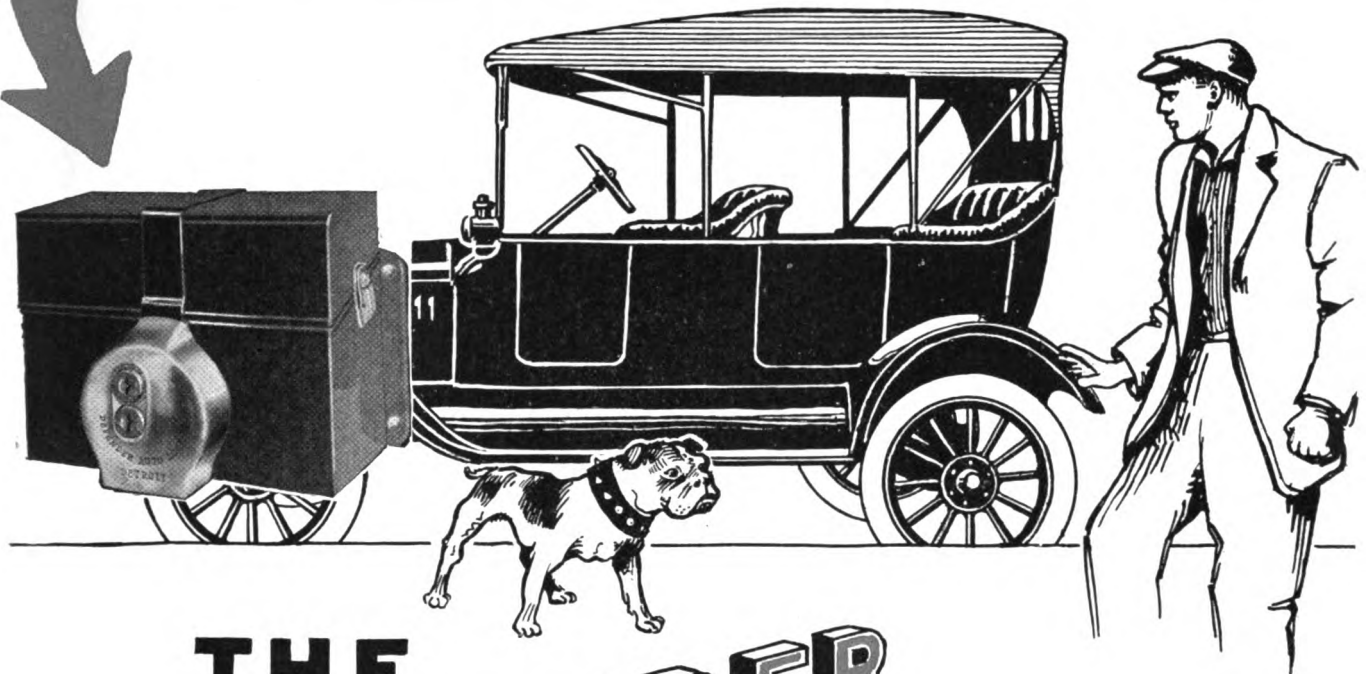
Would you like to have
the MIAMI
Trailer Agency?

Look into this proposition immediately. There is a big demand for it in your territory. Every firm which has a delivery or hauling problem should have a MIAMI TRAILER. A large output this year assures you of an uninterrupted supply. Wire at our expense, or write immediately for particulars.

The Miami Trailer Company
TROY (Miami County) OHIO



HE CAN'T GET AWAY
WITH IT *because for only* **\$4⁰⁰**



THE DEFENDER AUTO LOCK

STANDS BETWEEN

Ford cars, and all danger from "joy riders" petty thieves and sneak thieves, the three greatest "pests" in the whole country today.

THE FIVE BIG REASONS WHY DEFENDER LOCKS SELL

1. Locks and protects coil units with hardened steel band. (Patent pending.)
2. A beautiful, polished, solid aluminum casing; locks over switch. (Patent pending.)
3. Operates against the ignition by special grounding device. (Patent pending.)
4. Guaranteed for the entire life of car, and backed by a company fulfilling every sound business principle.
5. Recognized and used as a standard of perfection by insurance underwriters and saves 15% on insurance.

All Jobbers Handle the
DEFENDER

Write today for trade prices.

DEFENDER AUTO-LOCK CO.

506-508 Marquette Building
DETROIT, MICH.

Canadian General Elec. Co., Lim., Toronto, Ont.
Sole Canadian Distributor

DEALERS-Read This Message

IN
EVERY TOWN
FOR EVERY CAR

JENKINS VULCAN SPRING CO.
SERVICE

RICHMOND, IND.
ST. LOUIS - 1402 CHESTNUT ST.
MINNEAPOLIS - 1024 HENNEPIN AVE

FORT WORTH - 708 COMMERCE ST.
READING, PA - 538 FRANKLIN ST.
SUMTER, S C - 29 CALDWELL ST.

Automobile Springs

April 10, 1918.

RICHMOND, IND.

OFFICE OF THE PRESIDENT

Mr. Seymour Schiele, President,
Schiele Advertising Company,
St. Louis, Missouri.

Dear Mr. Schiele:-

I read with great interest your letter of April the 8th. You are correct. Our publicity campaign in the Saturday Evening Post should truthfully reflect the undying principles upon which VULCAN reputation is builded.

VULCAN is bed-rocked on QUALITY. Our equipment is most modern, and every VULCAN is so made that it must not only replace a broken spring of weaker fibre, but the replacement shall be considered as nearly permanent as human skill can provide.

Our supporting claim is SERVICE. The best replacement spring is valueless unless available. Our six branches (our own, see above) with complete stocks, coupled with our 3,000 and more active customers with full stocks, spell SERVICE that is real. Our slogan "In Every Town, For Every Car" shall become a literal translation of an established fact.

Do not overstate or exaggerate. We do not make an unbreakable spring. VULCANS are so made that a breakage is unlikely, even under the most severe punishment. Our test is equal to four thousand lbs. beyond normal load. We prefer to underpromise and overperform.

There are some good Dealers in fertile territory who are not carrying assorted stocks of VULCANS. We offer them free a useful display rack with an assorted order for twelve or more springs, and a very attractive profit. Go after them Mr. Schiele. They are ours by right of the feast we have prepared for them. Bring them in.

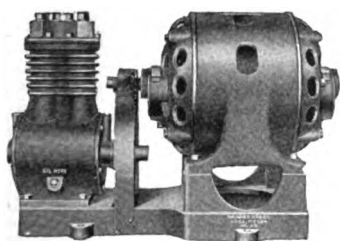
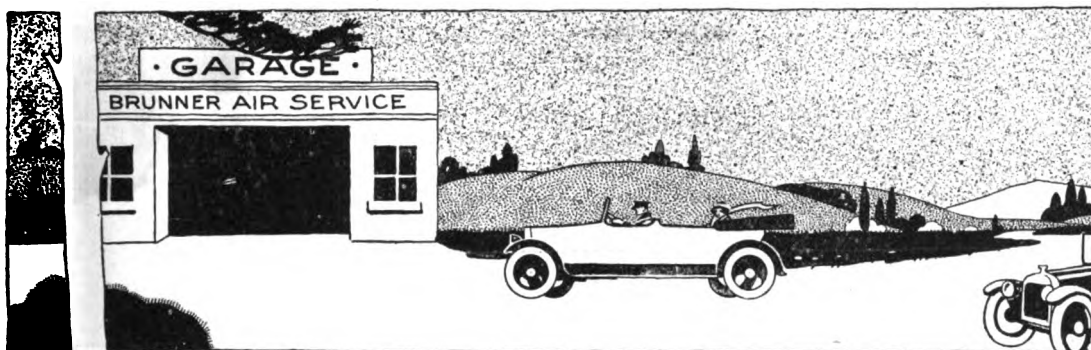
Yours very truly,

JENKINS VULCAN SPRING COMPANY.

T.B. Jenkins
President.

TBJ-REB

*Mr. Dealer:
I am certain a letter
from you to the Vulcan
people will prove to your
advantage Seymour Schiele*

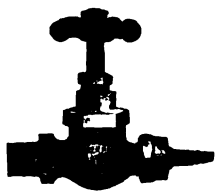


**IN THE GARAGE BUSINESS TODAY
REPUTATIONS ARE BUILT ON SERVICE
AND THE VERY FOUNDATION OF GARAGE
SERVICE IS A DEPENDABLE AIR COMPRESSOR**

INVESTIGATE THE **BRUNNER** AIR COMPRESSOR



Garagemen who investigate the air compressor field thoroughly before placing their order, invariably select the Brunner because they find a predominance of Brunner Air Compressors in the successful neighboring garages and the users always gladly recommend the Brunner, which has rendered high class service and helped them in building up their reputation.



Years of dependable and efficient service in the garage have built up an enviable reputation for the Brunner Air Compressor, which is being maintained by the continued dependability of Brunner Compressed Air Service.

Dependable compressed air tanks and fittings are just as necessary as an efficient air compressor.



A leaky needle valve, tank or air hose will reduce the efficiency and shorten the life of a good air compressor as well as add to the operating cost—and an improperly constructed air tank, an inaccurate air gauge or an unreliable safety valve will render a compressed air plant absolutely dangerous.



Brunner Compressed Air Tanks and Fittings are both safe and reliable, and will permanently increase the efficiency of any imperfect installation.

A length or two of Brunner "Resistoil" Air Hose would permanently reduce this item of expense, and convince any garageman that it is by far the best air hose obtainable.

Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner Jobber who covers your territory.



BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, N. Y.

Cincinnati Branch:
CINCINNATI, OHIO

"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies"





PASCO

Quality has created National distribution. From coast to coast, in this big country of ours, you'll find PASCO Service Stations, PASCO enthusiasts.

And it is just another case of ready appreciation—by dealers and buying public—of the genuine worth and the unique features of PASCO Wire Wheels.

The TANGENT METHOD of spoke-lacing, the INDESTRUCTIBLE HUB CAP, and the SAFETY LOCKING DEVICE appeal to anyone who knows the shortcomings of most wire wheels. And PASCO BEAUTY attracts instant attention.

If you wish, we will gladly send descriptive literature.

FOR FORDS Pleasure and delivery cars set of 5 wheels complete, in black \$75.00
FOR MAXWELLS Pleasure and delivery cars set of 5 wheels complete, in black or white \$100.00

Other standard colors, \$5.00 extra per set

Dealers: Write for our interesting sales plan

NATIONAL WIRE WHEEL WORKS, Inc., DEPT. "G" GENEVA, N. Y.

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

A Good Sign	24
Curtailed Production	24
Highway Improvement	24

GENERAL

Are You Bigger Than Your Business?	11
Are You a Success?	12
Sell What You Can Get Is Advice to Car Dealers.....	13-27
Success Assured for Second Automotive and Accessory Show	14-27
"A Business, to Be Successful, Must Be Systematized," Says Dan	15-23
Jobbers' Show a Trade Affair—No Sanction Will Be Asked for	16
Does Your Local Advertising Have "Punch"?	17
Out of the Mail Bag	17
"The Cab That Took the Tax Out of Taxi"	18
Pelletier An Optimist On Liberty Battleplane.....	18
Sixty Per Cent of the Automobiles Are Owned by the Farmers	19
Possibly You Can Win One of These Prizes.....	19
Bright Signs Bring Sales by Subconscious Appeal...	19
Effective Direct Advertising Need Not Be Very Expensive	20
Lawing Motorists to Safety Is Mission of Lens Makers	21-28
Fine Looking Windows Quickened Up Business.....	22
Under-Inflation Causes Waste of Much Power.....	22
Columbia Spring Design Promises Riding Comfort..	23
Shall We Shoot the Trumpeter?	23
New Alma-Made Tractor Has Two Novel Features..	26
Boston Dealer Builds Special Publicity Car.....	27
Enthusiasm	28
Military Scout Model Made by Elgin Company.....	32
Big Truck Tires Help Make Fast Akron to Boston Trip	36
Official Bulletin Contains War Data	36
Tire-Doh Makers Help Dealers Sell Product.....	38
Advice to Users By U. S. Tire Company.....	38
Unsurfaced Concrete Is Best Road for Truck Use....	38
War Savings Stamp Order Blank	38
Woman Is Highway Builder; Contractor-Husband in War	40

DEPARTMENTS

How to Make the Shop Pay.....	28
Welding, Cutting and Brazing	30-32
Mechanical and Engineering Problems	34-36
Accessories and Garage Equipment	42-44-46
Buyers' Reference	60
Index to Advertisers	61

American Garage & Auto Dealer, Inc.

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CHICAGO, ILL.

Krege Building.
Detroit Mich.

52 Vanderbilt Ave.
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H. D. FARGO, Vice President E. C. HOLE, Vice President

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EDITORIAL

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"NORMA" PRECISION BALL BEARINGS

(PATENTED)

Unless your factor of safety is amply large throughout your machine—even in the so-called minor parts—your whole construction is weakened. Your ability to meet overload and emergency strains is limited by the resistance of the weakest part. The reserve strength of a car or truck is only that of its weakest part or accessory.

The proved service capacity of "NORMA" Speed Bearings—the high factor of bearing safety which they impart to an accessory in which they are used—explains why the makers of magnetos and lighting generators of proved dependability have standardized their product on "NORMA" Bearings.

Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.





Deliveries Guaranteed by 100-cars-a-day capacity

ARE you worrying about getting enough cars to sell? The situation is serious, but less so with Elgin Six dealers.

Because Elgin factories, served by 2 belt lines connecting with 39 great trunk-lines of railroad and within a half mile of the largest yard in the world for the storage of freight cars, will be less affected by shipment of war supplies than any other automobile factory in the country.

Even with drive-aways, cars can be had quicker and at less expense than from most other shipping points. That's why far-sighted dealers are fast coming to the Elgin Six, perfect in action and a car that sells readily and makes friends everywhere—more than 6000 already in the hands of enthusiastic users.

If you want to protect yourself with a profitable agency connection, better wire for territory reservation at once. For immediate attention

Address Dept. 11D

ELGIN MOTOR CAR CORPORATION
2427 Michigan Ave., CHICAGO

4-Passenger Roadster
5-Passenger Touring

\$1095

Military Scout—\$1195
Sedan—\$1645
f. o. b. Chicago

THURN &
CHENOWETH

AMERICAN GARAGE & AUTO DEALER

Comprising
AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX, No. 5

New York—CHICAGO—Detroit

May, 1918

Are You Bigger Than Your Business?

Are you an impediment to your business, or are you leading it on?

Your business can only measure up to your capacity, and when it has reached that point it will stop.

To keep your business ever expanding, you must expand—you must broaden your vision; develop your insight; increase your capacity for outlining your future activities in order to give your business room for expansion.

Strive continually to keep a few paces ahead of your business and your business will in turn keep only a few paces behind you, no matter how fast you travel.

Study your business—both present and future conditions and possibilities; visualize, plan, create, analyze, and you will be the leader of your business instead of a bumping post for it.



Are YOU a Success?

You Must Make the Most of Your Opportunities—
Utilize Your ACTION—ABILITY—
ENERGY and INITIATIVE—Be
a “4-Square Man.”

Are you a success?

This is rather a personal question. Possibly it might prove embarrassing. Possibly it may make your chest heave with pride.

What class are YOU in? Are you a SUCCESS as a business man? Are you a part—SUCCESS—(the other part never having been developed)? Or are YOU a has-been? Or are YOU really up and going and “full of pep” like the successful business man should be?

What is SUCCESS anyhow? Success may be defined as the *favorable* result of an undertaking. A venture in other words, which makes good.

But SUCCESS is furnished in different measurements. Some men get a good measure of success, whereas other men flounder along year after year on a “*burnt-out-spark-plug*.”

“Self analysis” is essential. If a business didn’t take an inventory of itself every year, it wouldn’t know whether it was going backwards or forwards. And so it is also true that if a person will not take an inventory of himself every now and then, he will *not* know whether his stock—his BRAINS—his chief asset—is depreciating or appreciating.

The idea of a successful business man is that he must be a “4-square man” possessing ACTION—ABILITY—ENERGY—and INITIATIVE. Lacking any one of these requisites—the man is “lop-sided”—and has to be squared up.

Now, old fellow, YOU have ACTION—YOU have ABILITY—YOU have ENERGY—and YOU have INITIATIVE—but *use it!* Put them together!

There’s a little store which sells automobile accessories—everything!—which the surrounding territory needs—in Englishtown, N. J., and this “cross-roads” store does an ANNUAL BUSINESS of \$137,000 in a town of 468 inhabitants.

The secret of such success is the “man behind”—yet he is no more smarter than YOU. Yet this man has succeeded (and Bradstreet rates him at \$750,000) because he’s a *thinker*. He knows what his customers want. And his customers know that he knows what they want. Consequently they buy on FAITH. They know that he will please them. THIS IS SUCCESS! He has worked up a success and reputation by concentrating on standard—or “advertised goods.” *He always has a live window dis-*

play. He is a splendid example of the type of man that you should pattern after.

Just because YOU do a larger business than the fellow a block away—don’t be satisfied. Nothing is so deplorable as the self-satisfied, happy-go-lucky automobile dealer or garage man who contentedly paddles along day after day, week after week, and month after month—sitting in his office smoking a 5 or 10 cent cigar with his hands in his pocket and feet on his desk—playing the role of prosperity.

YOUR business is no bigger than you are. If you have “perspective”—and realize the advantages which you can gain by selling TRACTORS, TRUCKS, TRAILERS, ACCESSORIES—and by selling YOUR “PERSONALITY” to YOUR customers you will be a success.

“As a man thinketh so is he!”—is a mighty true saying. If YOU think BIG—you will be BIG—if you think little—you’ll be a little frog in a little pond.

If YOU want to be a “BIG FROG”—then it’s up to you to stretch out. USE YOUR IMAGINATION. You don’t need an oil can! There’s *no* charge for the gasoline you mentally consume—but if YOU *will* use your head—your eyes—and your ears—you’ll grow BIGGER—and YOUR business will consequently develop.

Eighteen years ago Atwater Kent of Philadelphia had \$250 in the bank when he started in business. But Atwater Kent had more than mere capital—he had PUSH—and he had BRAINS—besides personality.

Today he is doing a business of more than \$1,500,000 a year as a manufacturer of automobile ignition systems. The *entire* plant and enterprise in Philadelphia stands as his personal and unencumbered property. He is doing a national business—sells to thousands of automobile dealers—yet he has no traveling salesman on his payroll—and never had any. MR. KENT PROVED LARGER THAN HIS BUSINESS.

WHY DON’T YOU STRIVE FOR GREATER SUCCESS?

Analyze YOURSELF! Study YOUR shortcomings! Change your habits—if they need to be changed—then some day YOUR FRIENDS about town will say MR. ——— (You supply the name) ——— is *certainly* a *successful* automobile dealer!

"Sell What You Can Get"

Is Advice to Car Dealers

Automobile Agents Should Handle Trucks to Help Reduce Transportation Unit Shortage

By **GEORGE W. HIPPLE**
General Sales Manager
Redden Motor Truck Company, Inc.

News from Washington that Director General of Railroads McAdoo has given orders for cutting down of passenger train service on our steel highways in order to provide more locomotives and track room for freight trains furnishes a strong argument for automobile dealers going into the motor truck business.

We have been told for some time that freight **MUST** have the right of way over passengers on our railroads. Now Mr. McAdoo has proved this, in case there was any doubt in our minds.

Transportation, as I wrote last month, is one of the greatest problems confronting us. I think it **IS** the greatest. It will be solved, **MUST** be solved, and the automobile dealers and garagemen will be found doing more than just their "bit."

The fast and economical movement of merchandise is a task that can be best accomplished with the help of motor trucks. Freight transportation in bulk and for long distances must be done either by railroads or the larger motor trucks. But for the shorter hauls, the lighter trucks are best. It has been said that 95 per cent of all hauling is done in units weighing not more than $1\frac{1}{2}$ tons.

It is in obtaining the vehicles to carry these loads of $1\frac{1}{2}$ tons and less that the Truck Maker comes to the front. Their use does not require the money outlay that is necessary when the conventional type of truck is purchased. This is a most important consideration to thousands of merchants and manufacturers who now, more than ever before, must be careful with their capital.

The passenger car manufacturers of the country have, at the request of Government officials, agreed to cut down their production 30 per cent up to July 31. After that date it is possible there will be an even greater reduction in the number of cars made for passenger use.

With the above facts in mind, my advice to automobile dealers is:

SELL WHAT YOU CAN GET.

By this, I do not mean for them to be content with simply selling whatever necessarily limited number of new passenger cars they can obtain but for them to handle trucks.

One of the most simple methods of going into the truck

business is for them to secure the agency for the Truck Maker. One of the great advantages the automobile dealer possesses is that scarcely any extra overhead expense is incurred by becoming a motor truck agent. They have showrooms now and the majority of them have service stations and a goodly number also have repair shops.

There is another feature of this matter. Automobile merchants of the right kind—and that is practically **ALL** of them—will be performing a patriotic duty as good American citizens by putting their brains and energies behind the task of helping to ease the transportation difficulties of their country. The right kind of patriotic effort in this line will surely bring results that will please them as Americans and as men.

In our own organization we are working hard to extend the benefits of the Truck Maker as widely as possible. Mr. Samuel S. Toback, the president of the Redden Motor Truck Company, Inc., has declared that we must not stop until means have been provided by which the Truck Maker will be capable of universal use. Our engineers are engaged in this task right now and we know they will succeed.

We are glad to advise automobile dealers concerning the motor truck business, even though it will be impossible to add all of them to our sales force. And we have certain definite advantages in this, for both Mr. Toback and I have been dealers ourselves.

We have not only the **DESIRE** to help others but the **KNOW HOW**, because of our own extended experience in the retail field.

These might be styled made-to-order times for selling Truck Makers. Never before has there been, in this country, so many persons willing to conduct both personal and business affairs in the most economical manner possible. This is shown every day by the folks who are proud to wear and use old things, such as clothes and hats, that formerly would have been discarded.

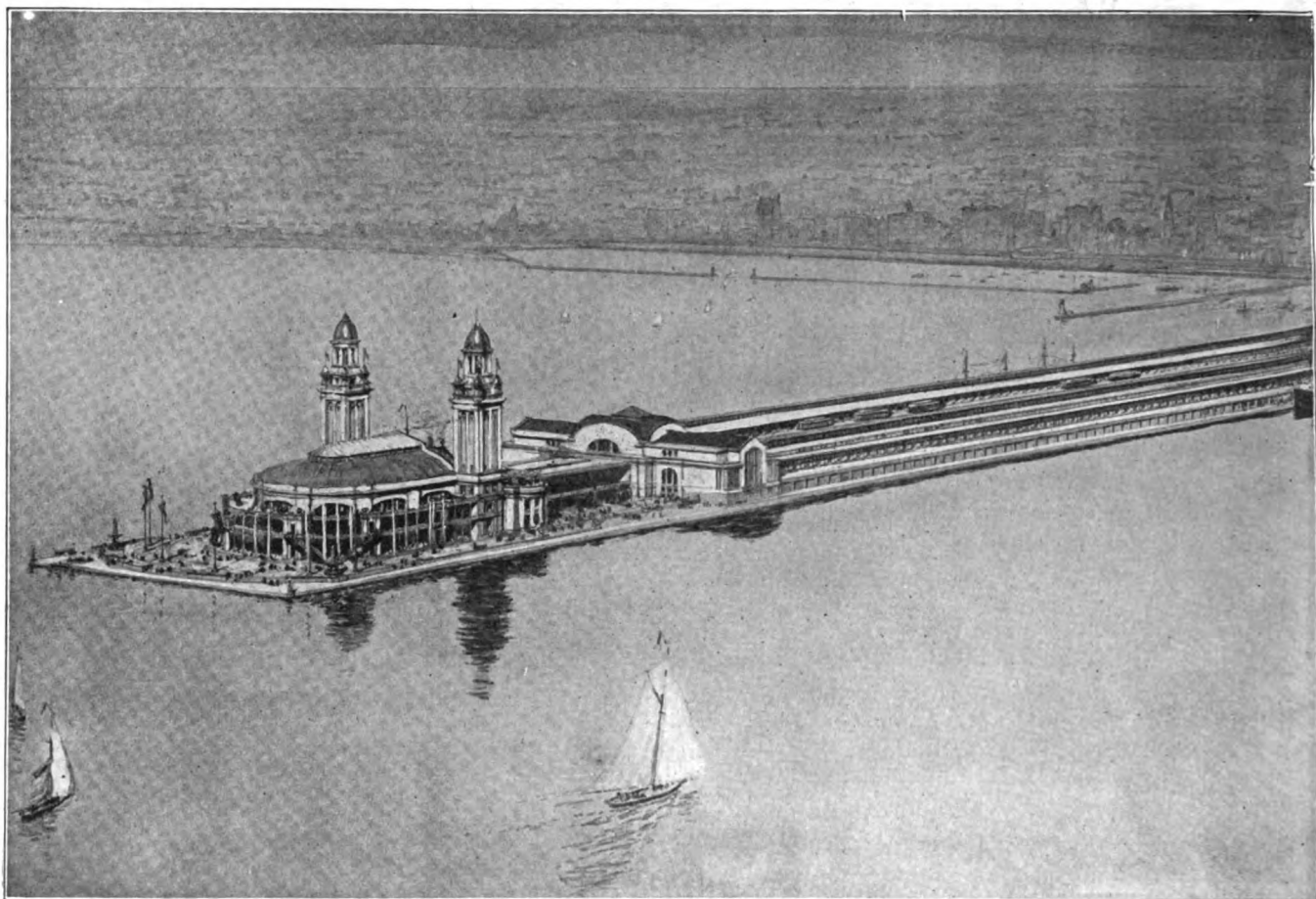
Men—yes, and women, too—are today wearing half soled shoes who would have scorned them only a few months ago. Now they do, and **BOAST** of it to their friends.

To a business man, the purchase of a Truck Maker as a transportation unit corresponds to having an old suit fixed up or using repaired shoes. Very often he **NOW**

(Continued on page 27.)



Samuel S. Toback.



Chicago Municipal Pier and Convention Hall.

Success Assured for Second Automotive and Accessory Show

Exposition Directors Engage Chicago's Fine Municipal Pier for Successor to Ford Fitment Exhibition

Success is already assured for the Second Annual Automotive and Accessories Exposition, to be held in Chicago September 14 to 21. While the first exhibition conducted last year under the name of the National Exposition for Ford Accessories was held in the Coliseum, the forthcoming show is to be staged on Chicago's splendid Municipal Pier.

Reports were made on the various activities of the organization at a dinner given to the committee chairmen, newspaper and trade journal repre-

sentatives at Hotel La Salle, Chicago, Tuesday, May 7, when the lease for the show building was formally turned over to President J. E. Duffield.

One of the things brought out at this dinner was that there is a great deal more space available on the Municipal Pier than in the Coliseum, and it was more than hinted that the original plans as to the amount of space to be used will be increased owing to demands from would-be exhibitors.

The show will be under the management of H. V. Buelow of Toledo, who handled the Ford show last year. He also manages the annual dealers' automobile show at Toledo, as well as the Farmers National Exposition in that city.

The reports made at the dinner indicated that the plan of admitting trucks to the show has met with hearty response from makers of business motor vehicles. It is also certain even now that a great many of

(Continued on page 27.)

"A Business to Be SUCCESSFUL Must Be Systematized," Says Dan

Safeguard your profits or sales prove useless.

"Welcome to our city, Dick," greeted Dan Thrift, "so you have at last found time to come over and inspect a 'Modern Garage.'"

"Yes," replied Dick, "I simply must get some of your time, labor and money saving systems to working at my garage, as my business is growing so fast that unless I have some system for handling everything, I find there is more lost motion than I ever suspected, and I realize now that lost motion means lost money and lost money means sick profits."

"Yes," commented Dan, "if we could only investigate a few of the unsuccessful garages over this country, we would find that about 99 per cent of them owe their failure to the lack of business principles, economical and efficient systematized methods of handling their repairs, sales, etc."

"It makes little difference, Dick, if a man does a whale of a business and while he is working to round up this business, allows his toll to slip through his fingers. Safeguarding your profits is as vital as making sales, for what does the sale profit you if your commission is eaten up by lost motion?"

Net Profits Stationary

"I fully realize that, Dan, for I can see my sales growing daily, yet for the past three months my net earnings for each month have remained the same. It is for that reason that I am here. You told me you would explain your method of handling the repair department of your business, and how you make each department work for and with the others."

"Suppose," suggested Dan, "that we start at the repair department and work forward to the sales room."

Fitting action to words, the two young garagemen started for the repair department.

"Now first," said Dan, as they reached the busy repair department of the Thrift garage, "you will no-

tice that every man but one is very busy. The one you see over in the corner who is not very busy, is the foreman of the shop. I impress upon him that his duties are to see that the mechanics are busy every minute; that they are not spending a minute too much time on any one job; and that they are *doing good work*."

"I or any other man running a garage, can afford to pay a man to oversee the work done in the repair department."

Good Foreman Needed

"It is, of course, necessary to select a man for the foreman's position who is a first class mechanic and who knows when a job is done as it should be and just about how long it takes to do a certain job. He also must be one who can handle men, get the most out of them and keep their good will at all times."

"I impress upon the foreman that his salary depends entirely upon the profits shown by the repair department, and to show a good profit in this department, he must see that his men turn out not only good work, but that each job is completed in minimum time. As quickly as my repair department shows a regular increase in profits I give the foreman a raise in salary, and this keeps him keyed right up to the highest notch and working for the interests of the company all the time. He even goes out in his spare time and solicits repair work for his department. He is interested financially, and you know, Dick, that makes a man work."

"Next, Dick, you will notice that there is a place for everything. All tools and equipment intended for the use of all the men must be kept in one place so that no mechanic has to waste fifteen minutes looking for a certain tool left perhaps in some out of the way place the day before. This is an iron clad rule of the shop and must be lived up to by every man

who works here."

"Over here you will see I have arranged steel bins for all repair parts; packings, brake lining, piston rings, etc., and before a workman can secure a single part for a job, he must present his repair ticket to the foreman who charges that job with the parts secured—there is no trusting to memory or going and helping yourself to expensive parts."

Ticket for Each Job

"When a job is completed the repair ticket is at once turned in to the foreman who stamps on the ticket the time the job was completed, which, when checked against the time stamped on the ticket when job was begun, gives the actual time to be charged to the job, any repair parts, oil, gas, or other material used. This gives us actual cost and amount collected on each job handled in the shop."

"At the end of each day the foreman makes up a recapitulation sheet on this form:

(Shown on page 23.)

"Every hour of each man's time, every repair, part, each gallon of oil and gas, and any other material used is accounted for. At the end of the month I can take these daily reports of the shop and in five minutes time see exactly how much my repair department has made—or lost. Such items as rent, advertising, light, taxes, insurance, etc., etc., are prorated between the various departments as overhead, so that each department is carrying its share of the dead load."

"If there is any exchange of merchandise between the different departments they are charged the same as a customer would be. That is, if the shop needs a dozen wrenches the foreman goes to the accessory department and purchases them and is charged with these wrenches, and the accessory department in turn receives

(Continued on page 23.)

Jobbers Show a Trade Affair--- No Sanction Will Be Asked For

Commissioner Webster of National Association Outlines Attitude of the Organization on Matter

Even though it has been reported that the Motor and Accessory Manufacturers, Inc., have refused to grant a sanction for the proposed exhibition of the National Association of Automobile Accessory Jobbers at Chicago in October, plans are going forward for the show. Commissioner Wm. M. Webster of the jobbers' organization issued a statement May 7 to members of the association on the attitude of the accessory manufacturers' body, which stated that some members of it had stated they would "assume jurisdiction" over the jobbers' show. His statement was in part as follows:

"I incline to the belief that if they rightly understood just what we had in mind of giving, a Trades Show without charge, they would not have given the matter a second thought or assumed an arbitrary position. It may interest you to know that long before our Association decided to embark in the show business, arrangements were on foot, plans well under way, blue prints had been prepared and options secured to start a similar undertaking for the especial benefit of the accessory manufacturers, inspired, I understand, by a number who became dissatisfied with the treatment they had received, and others who were willing to join hands with them. The feeling in this direction is so strong—has become so thoroughly crystallized—that mere resolutions or arbitrary mandates will not keep it down, but an accessory show of the kind we propose to give is bound to come.

"The announcement issued March 29 brought out a great number of letters and in many cases the authors very severely criticised the treatment accorded them on show matters in the past. Some openly expressed their dissatisfaction and stated they had about concluded to discontinue making exhibits at the annual shows, while others took the stand that if the order issued on this matter was enforced they would resign from that association, rather than submit. It might not be amiss if others feel in the same way to at least take it up with these people and explain the great injustice they are imposing upon you, provided you think well enough of it, or if it is of sufficient importance to you to do so.

"I am trying to reconcile their inconsistency in differentiating against *our*

show when it is a known fact that their members have made exhibits during show time in different hotels, where they bought space and where no admittance fee was charged—that is our case identically—a distinction in practice without a difference in principle.

"In the many letters I have sent out pertaining to the show I have studiously refrained from making any mention whatever of, or alluding to, these expressions of dissatisfaction in any way, feeling it was not just the proper thing to do and preferring not to say anything that might be construed that we were even trying to make capital, or in any way take advantage, of them, but I now feel I should give you all the facts.

"It matters not where, when or how our members show their goods, improve their condition or promote their interests, so long as they properly conduct themselves and make a creditable exhibit in the show we intend to give. I feel it a sense of duty, however, to here clearly point out to you and especially to such of our members who may for the time being, through coercion or otherwise be kept from exhibiting at our show, that exhibits in your line will be made by one or more of your competitors, who will naturally make friends, take orders, sell goods and open new accounts, possibly with *your* customers. Just how long you can, or will, stand this sort of thing time alone and your ledger accounts will tell, for the great army of the better class of jobbers who you know attend our conventions, will also attend our show and they are a factor which must be reckoned with, for they certainly control the purchasing power, and that supports shows.

"Another important consideration is if you absent yourself from such a splendid opportunity of being thrown directly in contact with your customers—the jobbers—as we offer, and which opportunity has, as a matter of fact, never before been offered in this condensed and practical form, you will naturally be the loser.

"In the maximum space at our command all but about thirty units have been subscribed for and at this writing I am worried a great deal more about how we are going to be able to take care of our members and supply them with space than I am about anything else."

The announcement that the jobbers planned holding a show was made in an earlier communication from Mr. Webster to members of the jobbers' association. It was in part as follows:

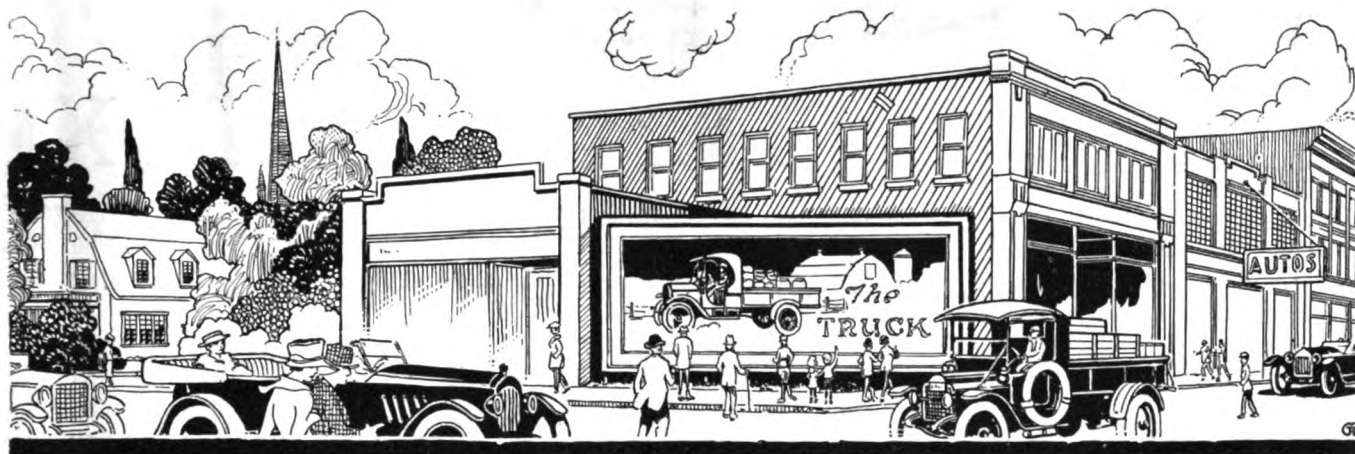
"That we change the date of our annual meeting from January to the last week in October, in consequence of which we will not in future meet at the time of the annual automobile shows as has been our custom and which in earlier days seemed desirable, but owing to our fast increasing membership does not now seem essential.

"At the annual meeting in October, in conjunction with and wherever and whenever possible under the same roof, though segregated and entirely separate and apart from the convention, we will hold a live, up-to-date accessory show which will afford the jobbers an opportunity to see the new inventions which have been brought out and will further enable them to secure illustrations, lists and other data for their catalogs, thus making it possible to get out their new catalogs close to the first of each year, which under the arrangements in the past has been quite impossible.

"Many of our associate members have felt the duplication of exhibits at the automobile shows which come so close together quite burdensome in the matter of expense and otherwise, with the likelihood of even a third automobile show, while on the other hand, our arrangement will permit of their displaying their goods once, and at a time, in a manner and at a place where they will directly reach their trade with greater advantage and more profitable results than past arrangements have afforded.

"Outside manufacturers will be afforded the opportunity to show their goods in order to make the show attractive and thoroughly practical from every point of view. It is not, however, the intention to admit the general public, simply the jobbers and their customers—the dealers.

"It is the intention to hold the sessions of the convention from 10 a. m. to 1 p. m., and then adjourn for the day. In the forenoon, only dealers will be admitted to the exposition and at 12 o'clock noon the doors will close to all except the exhibitors, manufacturers and jobbers and their aids. This will admit of the principals and heads of concerns, both manufacturers and jobbers, attending the convention to then come in direct contact with one another at the show in the afternoon.



Does YOUR Local Advertising Have "Punch"?

Some fellows who have a stronger punch make their opponents take the count. Are you getting your business in shape so that it will have the best punch? Are you going to make your business felt in the territory you serve?

Give your advertising—personality—make your individuality count. If you expect people to read your advertising—make your advertising so interesting that they *will*.

The public admires the firm or the *man* who can do "original" advertising, simply because the public is always looking for something new.

If you are in a moderately sized city you can use BILLBOARD space to good advantage—select your locations with care—get your BILLBOARDS placed where the greatest number of people pass—and then put on your BILLBOARDS copy which is attractive—which is convincing—which brings response. Many manufacturers of automobiles and motor trucks are glad to co-operate and can furnish you with appropriate signs so that all you have to do is to imprint YOUR name.

Remember that the vital thing is to give YOUR local advertising "Punch"!

A number of firms make a specialty of illuminated electrical signs for automobile dealers and garages which are powerful business aids. An electrical sign makes an excellent solicitation!

Neither are electrical signs expensive to buy or to operate. Any garage or automobile dealer should be willing to spend a few dollars to encourage and invite more business.

Electrical Signs will give YOUR Local advertising more "punch"!

Patronize your home newspapers even if you can afford to carry but a small card. Change your copy frequently—but cover your business—if you have a TRUCK agency invite the farmers to inspect your truck—if you have TRACTORS to sell get them interested in your tractor and its advantages—show them that they can save money, likewise do better by buying ACCESSORIES of YOU—get them coming! (*Put "punch" into your local advertising.*) Small cards can be made as effective as larger space. But you must know how to use your space properly. A good illustration surrounded by an attractive border, which can be set by your printer, with a few good "backing points" will soon get the public responding.

Repetition and suggestion make "local advertising" very productive and if your business will justify the use of electrical signs—and a little newspaper space—and possibly a few billboards—and an occasional follow up with a calendar, or blotter, or good timely letter—YOUR advertising will soon have such a "Kick" to it—that YOU will be the busiest automobile center in YOUR city. Remember that

everything depends on YOUR "Punch"!

Out of the Mail-Bag

(From Our Subscribers.)

"I think your magazine one of the greatest publications out and enjoy it very much."—Chas. V. Soper, Chico, Cal., R. D. No. 1.

* * *

"Enclosed find check for \$1 with which enter on your records for a year's subscription of the AMERICAN GARAGE & AUTO DEALER which we find to be very satisfactory."—Fishinger Garage, Hilliards, Ohio.

* * *

"Will take this opportunity to thank you for the many helpful hints contained in the AMERICAN GARAGE & AUTO DEALER the past 12 months. We are enjoying a good business but take pleasure in telling you we can always make business a little better by accepting your advice for new business. Enclosed is check for next year. Wishing you continued success, we are."—Metropolitan Garage, Oklahoma City, Okla.

* * *

"Received a copy of the AMERICAN GARAGE & AUTO DEALER and like it fine. Enclosed find check for \$1 for one year's payment."—Grauerholz Bros., Memphis, Neb.

* * *

"I class it with the best."—H. Judd, Rigly, Idaho.

Let us tell you how to turn your spare hours into cash!

"The Cab that Took the Tax Out of TAXI"

The Yellow Cab Company of Chicago, Ill., has built up a city-wide business because it popularized its service and gave to Chicago people "taxi-travel" that was prompt and inexpensive.

This aggressive firm has resorted to all forms of advertising and we are pleased to reproduce herewith a cut-out card, which has been very useful and effective in letting Chicago know that its taxi rates were reasonable. This cut-out-card is unique as a business getter. The "Yellow-Cab" and "Chauffeur" are reproduced in their natural form—so that he who sees the card—will *remember* the Yellow Cab

Make your place the most "popular" accessory store or garage or automobile agency in YOUR town.

Don't be a piker! Spend some money to build *YOUR* business—if you are not willing to spend a little money, how do you expect others to have faith in *YOU*?

Be original—think up something different than that used by the other fellow—it doesn't require any greater effort.

Do *YOU* use NEWSPAPERS, BILLBOARDS, ELECTRIC SIGNS, MAIL CARDS, CALENDARS, BLOTTERS, LETTERS, WINDOW DISPLAYS?

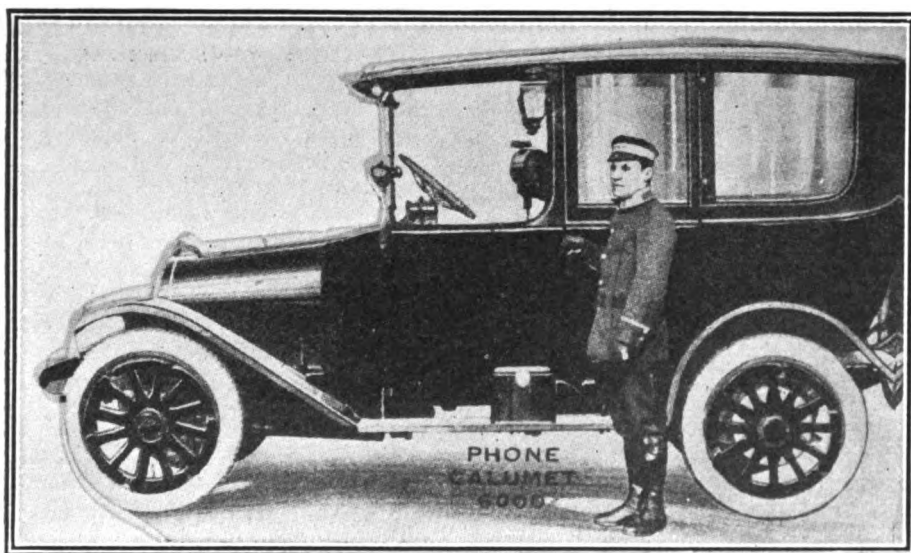
Can the AMERICAN GARAGE & AUTO DEALER be of service to *YOU*? If you are too busy to get up your "business-getting ideas," consult our service department. There's no charge for this service. Simply give us an idea as to what you want—what you need—and we will consider it to be a great privilege to serve *YOU*.

Put "more" steam into *YOUR* business. That's the idea! Get on the main track—and avoid the sidings!

Pelletier An Optimist on Liberty Battleplane

Enthusiastic praise for the Liberty battleplanes, now under construction for use of American military aviators in Europe, comes from E. Le Roy Pelletier of Detroit. Mr. Pelletier, long a prominent figure in motor car merchandising, is now the Reo advertising counsel but is qualified to talk about airplanes. He made a number of flights in France when over there about ten years ago and would have brought a plane back with him but for his wife's refusal to ride in it. Speaking at Rochester May 7 he thus tells of his new aviation experience:

"Was up 15,000 feet in a Liberty battleplane at Dayton yesterday. Wonderful experience. Thirty-mile gale blowing and choppy, yet we did loops, spirals, spins, slides and three Immelman turns. Always under perfect control. I can testify that Liberty motor and plane are greatest ever built. Will outrun, outclimb and outmaneuver any other. Plane I was in was stock model, now being manufactured, and was shipped last night. I have new lines optimism now on tap."



One side of Yellow taxi cut-out card.

when it goes flitting by in the street.

Possibly in *YOUR* business also you might adopt some original form of solicitation. *Originality is a great thing!* It's the difference between success and mediocrity.

Look further than tomorrow! Try and think up some suggestions and ideas which will enhance your sales and increase your number of customers. Don't consider that your competitor is any wiser than *YOU*! You have as many **BRAINS** as he—but possibly he may use them a little differently than you.

Get *YOUR* business talked about!

Don't be afraid to spend 2 or 3 cents for a stamp! The stamp usually gets there—and it's quick.

60% of the Automobiles Are Owned by One-Third of the People—the Farmers

2,964,765	is the number of automobiles owned by farm families, January 1, 1918.
1,976,511	is the number of automobiles owned by city families, January 1, 1918.
2.14	is the number of farm families to each farm-owned car, January 1, 1918.
6.5	is the number of city families to each city-owned car, January 1, 1918.
467	is the average number of automobiles in every 1,000 farm families.
153	is the average number of automobiles in every 1,000 city families.

Possibly YOU Can Win One of These Prizes

Every motor tradesman should advertise in one way or another, or better still, in many ways. We wish our readers to tell us about their pieces of advertising copy that have proved best, so far as business results were concerned.

We have arranged a contest and will award cash prizes of \$25.00, \$15.00 and \$10.00 respectively for the three best advertisements selected by the contest judges from among those submitted to us.

These advertisements may have been for garage service, or for trucks, or passenger cars, or tractors, or trailers, or accessories; for any or for all of these lines of merchandise. The advertisement need not have been a large one, and very often it has proved that the small space advertisement with an attractive type layout has been more effective as a business bringer than another advertisement that occupied a much greater space.

We want to know how you distribute your advertising. Do you use your local newspapers? Have you found that daily papers or weekly papers are best for you? Do you use the same size space always? Have you found that you could trace any results at all when you used a standing advertisement that was run without change several times?

But the principal thing that we would like to know is just how much money you took in, in dollars and cents, that you can trace to your "best" advertisement.

The contest closes August 1, 1918. The decision of the judges as to the prize winners will be announced in the September issue of the AMERICAN GARAGE & AUTO DEALER.

Send in your advertisement. Even though you may be doing business in a place of less than 1,000 inhabitants, that is no reason why you should not win the first prize. Address your letter to Advertising Contest Depart-

ment, AMERICAN GARAGE & AUTO DEALER, 116 So. Michigan Avenue, Chicago, Ill.

\$50 in cash prizes

\$25 - First prize
\$15 - Second prize
\$10 - Third prize

**Are you going to win one
of these rewards?**

Bright Signs Bring Sales By Subconscious Appeal

For years psychologists have been writing bulky works on the workings of the human mind, but it is only recently, and because of certain definite recent findings that business men have begun to study these works with a view to making practical application of scientific facts. The man who runs a garage or a sales agency is not interested in the subject of psychoanalysis in itself, but he is vitally interested in it if it can show him how to sell more cars or garage service.

Recent works by such authorities as Freud, Jung and Brill devoted to the workings of the unconscious mind have a direct bearing on merchandising problems. They have found that people are not so much influenced by appeals to their active reason as they are by general impressions which cut in deeper and appeal to what is termed the "subconscious mind." In other words, to succeed in selling the advertiser must build up an atmosphere of attractiveness throughout his whole business, and the logical place to start is on his store front because it is there the first impression is formed.

In line with this code of reasoning the automobile sales agent or the garage man should be careful to see that the electric sign above his door makes the right kind of an

impression upon his possible customers. It should reflect the clean-cut personality of his whole organization. How this effect can be obtained in a sign is told in a little book published by the Flexlume Sign Co., Buffalo, N. Y., makers of Flexlume Oplex signs, which treats the possibilities of electrical advertising at considerable length.

This company, by the way, has made an extensive study of the needs of the automobile industry in the sign field and has produced a great number of designs to suit its need. Their signs are all distinctive, consisting of raised white glass letters standing out from a dark background, the lights being immediately behind each letter. This not only gives a brilliant effect when the sign is illuminated, but a splendid daytime effect as well, for there is no stronger day effect than these white Oplex letters on their dark background.

Another advantage of these Oplex signs is that they can be made with interchangeable letters by means of which the reading of the sign can be changed as often as the owner likes with little trouble. This has a strong appeal to the automobile trade where sales agents are constantly changing the line of cars they handle. With one of these interchangeable Oplex signs the old name can be taken out and replaced with the new one in a few minutes and at no cost except for the new letters, whereas with the old style of fixed letter sign to change car agencies rendered the sign practically worthless.

The booklet referred to and full information in regard to Flexlume signs will be sent by the company on request if THE AMERICAN GARAGE AND AUTO DEALER is mentioned.

One of the liveliest wires in the automobile trade has suggested that every man has a few pet expressions that help him over a rough spot. For instance, when he meets some one who is a little more pessimistic than usual the live wire says to the other fellow:

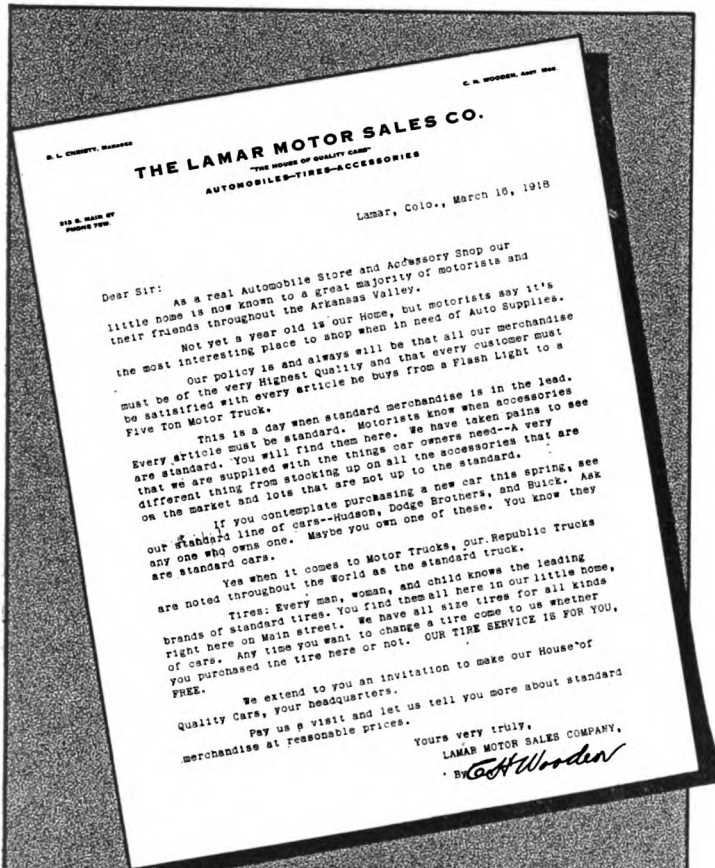
"When you are down at the mouth, remember Jonah—he came out all right."

Send us three of your best axioms, the ones you like best.

We want to get acquainted with you and you get acquainted with us.

Effective Direct Advertising Need Not Be Very Expensive

Enterprising Colorado Dealers Increase Business by Pushing Sale of Standard---or Advertised---Goods



That direct advertising does not have to be either elaborate or expensive has been proved by the Lamar Motor Sales Co., Lamar, Colo.

One of the circular letters gotten out by C. H. Wooden, assistant manager of this firm, is reproduced on this page. This concern sells not only automobiles but trucks and accessories and does not wait for its customers to come in. It goes after them through the mail.

One of the points brought out by the Lamar firm is that it deals in standard goods, or, in other words, in merchandise that is well advertised. This enables the concern to state with truth that it handles the leading brands of articles used by motorists.

Two sizes of folders are used by the company. One a small folder of four pages, folded once, and of the right size to slip into a small envelope. The other folder is a large one, is folded twice, and for mailing purposes requires a longer envelope.

The circular states that "we carry everything that contributes to car comfort at the lowest possible prices for merchandise of standard qualities" then a list of accessories is given which includes spot lights, shock absorbers, bumpers, goggles, motor robes and seat covers. There is a little sentence of explanation or description after each of the articles enumerated.

THE HOUSE OF QUALITY CARS

DEALERS IN

Dodge Bros.

Buick

and

Hudson

Automobiles

Republic Trucks

3-4 Ton to 5 Tons.

Smith Form-a-Trucks

HOME OF GUARANTEED TIRES AND TUBES

The following well-known makes we carry in stock at all times.

Goodyear

Goodrich

United States

Republic

Michelin

Blackstone

We make a Specialty of Ford Sizes.

We pay the parcel post charges on TIRES

Tool Boxes

are sure handy--We have them with a strong lock on them--They are made right and priced right

\$2.50

Radiator Covers

just a few left--must go before spring--get yours now

Flash Lights

handy for a thousand uses--prices: 75c to \$3.00

Auto Clocks

are handy and look dandy

Spark Plugs

the main thing in the engine--They must be good--Call and see our line of standard plugs for every engine

Tire Needs

such as vulcanizers, cement, tire sleeves, hook on boots, reinforcers, valve cores, etc.

Tire Chains

Don't skid your car--it's dangerous--use Weed or Rid-O-Skid chains

Tire Pumps

We sell the well known standard one cylinder tire pump known as the Rose Special--a guaranteed pump

\$2.50

Jacks

You ought to see the Weed Chain Jack--a child can operate it--Then we have such well known makes as the Simplex, Badger, etc.

\$1.50 to \$5.00

Does Your Radiator Leak?

If so, use Cement--it will stop the leaks--75c a can

Lamp Globes

for all kinds of cars

Tire Covers

they save that spare tire

A hundred other auto needs--Come in, let us tell you about them.

THE LAMAR MOTOR SALES CO.
Right on Main St.
Always Glad to See You

THIS and THAT

for the

MOTORIST

A LITTLE FOLDER from the

House of QUALITY CARS

THE LAMAR MOTOR SALES CO.
RIGHT ON MAIN STREET
LAMAR, COLO.

Lawing Motorists to Safety Is Mission of Lens Makers

Automobile Drivers Must be Convinced that Use of Proper Lights Benefits Them

By M. E. FABER
Advertising Manager
C. A. Shaler Company

The manufacturers of headlight lenses have educated motorists to think of such devices as something that had to be "lawed" on to car owners.

They were right.

No motorist is going to use dimmers and spoil his driving light in order to protect the people he meets, unless he is compelled to do so. "Safety First" is the motorist's motto, meaning safety for himself. Practically every headlight lens on the market today was designed merely to comply with "dimmer" laws and protect the other fellow. There are two classes:

The first class, comprising more than 80 per cent of all the different makes of lenses, diffuse the light and act upon the rays of light from a headlight lens in the same manner as a spraying nozzle acts



SHALER ROADLIGHTER:

upon the stream of water from a hose. The light is spread or diffused in every direction, thus producing no glare because of the reduced intensity of the light. Most users of this class of lenses, which includes everything from ordinary ground glass to lenses highly ornamented with all sorts of figures and designs, soon find that in order to see the road with any degree of certainty they must install bulbs of double the usual candle power. The result is that the glare reappears in even a worse form than when plain glass is used because the glare area is widened so that the approaching driver cannot possibly avoid it until he is past the offending headlights. In addition to this, the use of high candle power bulbs severely overtaxes the batteries.

The second class includes lenses of the deflecting type in which glare is eliminated by bending the upward rays of light below the horizontal where they no longer interfere with other drivers. In some of these lenses the entire beam is bent sideways after being bent down, thus giving the advantage of a still wider light than before, but obviously a light which is more intense in the middle than at the sides of the road.

In most designs the light is spread so much as to lose the distance intensity required for safe driving, or the road is over-illuminated close in front of the car by turning all of the rays which, with clear glass, are wasted in the air so that one cannot see objects in the distance as well as if the deflected rays had been entirely cut off by covering half of the lamp front. In some cases this excess illumination is modified by coloring the glass to such an extent as to prevent the passage of all but about half the light produced by the bulb, and a virtue is made of this necessity by playing upon the supposition that discoloration or lessening of the light gave it almost magic fog-penetrating properties. Furthermore, the bulbs must be focused very painstakingly or a stronger glare is produced than before and the road receives but little illumination.

A Safety Device for Motorists.

The prismatic construction of the new Shaler Roadlighter is different from every other headlight lens on the market. Its appeal depends not upon the compulsory compliance with "anti-glare" laws but upon the desire of every motorist for protection against the danger of night driving and for brilliant light that will allow him to travel at night with daytime speed, safety and confidence. The arrangement of the prisms is such that so intense a light is thrown on the edges of the road that even the glare of approaching headlights cannot prevent the driver from seeing ditches, culverts and danger spots plainly as he turns out to pass. At the same time there is no glare to blind the approaching motorist as all rays of light are bent down to within 42 inches from the ground, as required by all "no-glare" laws.

The operation of this new prismatic lens is as follows: The diagonal prisms on the lower half of the lens brilliantly illumi-



ACTUAL ROADLIGHTER ILLUMINATION.

nate the sides of the road like a spotlight. The only other way in which you could accomplish the same result would be to have a spotlight on each side of your car. The prisms in the upper half of the lens give the distance light and bend the glare rays down to within 42 inches from the ground. These prisms spotlight the road brilliantly 200 feet ahead of the car, giving a distance light which by actual test showed objects plainly 600 feet ahead of the car.

Illuminometer tests show that at points 150 feet or more ahead of the car the candle power on the road surface is from two to three times as great as it would be from a properly focused bulb of same power reflected through clear glass.

The result is that you not only have as good a distance light as with clear glass headlights but intense spotlight illumination on both edges and a brilliant spotlight illumination of the entire roadway 200 feet ahead of the car.

Since dimming of lights is necessary in cities only to conform to the municipal ordinances, while a strong driving light that will not blind approaching motorists is essential on dark country roads, the elimination of glare was only incidental in designing the Shaler Roadlighter.

(Continued on page 38.)

Fine Looking Windows Quicken Up Business

Send a Photograph of Your Best Display and Get \$5.

The space immediately behind the windows of a show room of any description can be made to pay big dividends on its cost when the merchant will devote a little thought and attention to making attractive displays of the goods he has for sale. He is proving his right to be successful and will surely bring more possible buyers into his place of business than if he neglected fixing up his windows.

Fine looking window displays quicken up business in a way that will be an agreeable surprise to men who have not tried this method of advertising. One of the principal advantages of attractive window displays is that they frequently arouse the interest of folks that could use the goods exhibited to such an extent that they will go into a store and purchase without any further sales effort being necessary on the part of the merchant or his clerks.

It is well to remember that the attractiveness of window displays is by no means based on the cost of producing them. Some very effective window exhibitions—so far as sales results were concerned—have been arranged without any expense being incurred for background or trimmings, the good effects resulting from the way in which the goods were arranged in the window.

The experience of great department stores in the big cities proves that window displays changed with a reasonable amount of frequency can be made a real asset of a business. While it is not expected that accessory men will be willing to devote money to hiring high priced window dressing experts there are still many ways in which they can make their windows profitable. The principal thing to remember is that it is well not to get too many different styles of articles into a window at one time, as this has a tendency to con-

fuse those who look at the articles displayed.

The AMERICAN GARAGE & AUTO DEALER wants to hear from its readers regarding the window displays that have been most successful for them. We are more interested in the simple displays that were quickly and easily arranged than in the more elaborate sort. We are anxious to have readers who have been successful with window displays send photographs of these windows to us, and at the same time tell us something about how the goods were arranged, how long it required to dress the window, but most important of all we wish to know about the sales result in business done while the particular window display was maintained.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

For each photograph of a window display which we accept for publication we will pay \$5.00 to the sender. All photographs will be returned, whether or not they are published in this paper.

It is not the dollar spent in business but THE IDEA behind the dollar which does the work.

Under Inflation Causes Waste of Much Power

Where is the greatest loss of power in automobile operation? A scientific investigation recently concluded enables the B. F. Goodrich Rubber Company to disclose a sequence of interesting data.

A test conducted with a 2700-pound automobile showed the power loss distributed as follows: Front wheels, 31 per cent; rear wheels, 30 per cent; front bearings, 8 per cent; and rear bearings (including transmission mechanism up to neutral gear), 30 per cent. Thus nearly two-thirds of the power is absorbed through the tires. These figures show the prime importance of proper inflation since so much of the power is expended through the tires.

To prove greater power is needed to pull under-inflated tires the test was continued. The apparatus used consisted of rollers on which a car was mounted. The car was anchored and the rollers driven by an electric motor. The amount of power required to turn the rollers with the tires inflated to 80 pounds was determined; then the tires were deflated to 30 pounds, and the amount of power needed was again recorded. It was found from the test that fully 25 per cent more power was needed on the under-inflated tires.

This test also proved that the absorption of power by the tire caused a tremendous rise in the temperature of the tire. Tire experts agree that internal heat and friction is the greatest destroyer of tires and that this heat is greatly augmented by under-inflation.

Another test proved conclusively the folly of under-inflation. It was made in this manner: A car with low inflated tires was run one-half hour at the rate of 40 miles an hour. Analysis then showed the temperature of the tires to be just 39 degrees hotter than when the run was started. Low inflation always causes greater tire flexure and the greater the flexure all the greater will be the heat generated, as it takes power to generate heat. The power generated by the engine is thus lost because the heat is dissipated into the air.

Summing up, maximum power from your engine, and minimum consumption of gasoline is only to be had with properly inflated tires.

Columbia Spring Design Promises Riding Comfort

The Columbia Motors Company, which pioneered other fields of motor car development, announces that its engineers have solved the comfort problem. Motor car manufacturers have been calling their cars comfortable for years, but generally there has been a lack of "reasons why."

"Motor car comfort depends upon spring design, and the relation of the springs to the rest of the car," says A. T. O'Connor, secretary-treasurer of the Columbia Motors Company. "Our designers have developed a non-synchronizing spring suspension which effectively checks and minimizes the rebound. It is constructed on the principle of forcing the spring vibration to work against the chassis vibration, so that the two will offset each other."

"In producing this sort of spring suspension everything depends on spring length. Every spring, of whatever length, has a certain vibration period, and a non-synchronizing spring is one whose vibration period does not correspond with the vibration period of the chassis. When these vibration periods are in accord there is the maximum of rebound. Conversely, when they are not in accord there is the minimum of rebound."

"A Business to Be Successful Must Be Systematized," Says Dan

(Continued from page 15.)

credit for them. This makes the men in the different departments very careful to see that no stock gets away from them without some charge to show why they are entitled to credit for such goods. Each department's men realize that they are judged strictly according to the net profit they can show and naturally they guard every article of stock.

"The first essential in the success of any business, Dick, is obtaining the whole hearted co-operation of every person in your employ and making them feel that they are a necessary part of that business; giving them to understand that their success depends only upon the success of your business. When you have done that and backed that promise up by salary increases when they have increased your business, then you have created a loyal and faithful force of workers."

"Now, Dick, getting back to the shop. I find the average mechanic, especially when busy on a hard piece of work, is not ordinarily disposed to be any to courteous to anyone, and

you know courteous treatment to a customer by everyone is absolutely necessary to keep that man's trade. I have, for that reason, found it necessary to caution all of my workmen about this and have made it clear to them that their jobs depend as much upon this as upon the work they do.

"You cannot, however, as successfully force a man to be pleasant as you can induce him to be so. To this end I decided to use the signs you see on the walls. Take this one over here for instance—'Our Garage is called the Neighborly Garage—Help us keep this good reputation by being courteous to everyone.' That sign in the course of a day will stop many short and curt remarks to customers. Another one over here—'Our Garage is our business home. Treat visitors in our home as you would visitors in your home.'"

"With eight or ten such signs in the shop, what chance has a man to look up from his work with a slur or

sharp remark on his lips without his eyes first falling on one of these signs. When he has mentally repeated that legend, what chance is there of this slur on his lips ever finding its way to the customers' ears?"

"I am afraid," said Dick, "if I try to gather too much information in one day I will lose the good points of it all, so I will take these notes I have made as we went along, and first get my shop in shape and then come over again for a few more pointers. If you will give me one or two of those blank forms you use, I will have some printed up for my use."

"Above all things," cautioned Dan, "don't overlook the little things—they are the ones, when taken collectively, which eat into your profits; and they are the ones when properly looked after once, take care of themselves thereafter."

"Come over any time, Dick, and I will be glad to give you all the suggestions I can."

Daily Shop Report

5-10-18

		Expenses	JOB REPORT		
			Cost	Charge	Net
Overhead	(To be inserted by Bookkeeper)				
Wages	4 Mechanics	16 00			
"	1 Helper	3 00			
Misc.	Repairing and enlarging work bench	2 10			
Ticket No.	(Remarks)				
14			4 90	7 50	2 60
15			10 40	20 00	9 60
16			8 10	12 50	4 40
17			90	1 35	45
18			1 10	1 60	50
19			3 95	6 00	2 05
20			8 00	12 50	4 50
21	Adjusting Smith's new car (Charge to Sales Dept.)	3 00	3 00		
TOTAL			37 35	61 45	24 10
Cash Received		39 95	Foreman D. B. HARRIS		
Charged		21 50			

EDITORIAL REMARKS

A Good Sign

There is a distinct feeling of relief in the country that almost amounts to one of joy because of the triumphant result of the Third Liberty Loan campaign.

Not only is it encouraging to note that the returns probably went a clean billion in excess of the amount prescribed, but—what is equally important—there were 17,000,000 Americans who bought bonds. That is one out of every six people, and proves a solidarity that ought to bolster up the courage of those who feared the United States was not united. The treasury department at Washington even says it is the "most successful loan floated by any nation."

The business world seems to feel more optimistic too, especially as it appears that the banks' resources have been drawn on comparatively little, and that the prospects for future loans are as consequently brighter.

Only 4,500,000 persons bought of the first bond issue a year ago, while 17,000,000 helped on the third. That makes it easier for everybody. The load is more evenly distributed and can be carried with less strain.

It is a response that should put a glow of pride in every American breast, and a greater measure of courage, too, for we all know that if the United States does her best, everything will end all right.

The review of business issued by the Federal Reserve Bank, of Chicago, says that general business conditions throughout this district show a material improvement over a month ago. Payment of war taxes and installments on the Liberty bond issue will be accomplished without a severe strain.

There is an increase in the acreage of farming operations, and so far conditions point to a big crop.

There is no denying we are living in a nerve-straining time. Everybody has an eye ever bent on what is happening "over there," and feels that he must watch his step continuously so that nothing is done to hinder the all-important task of winning the war.

Doing business—even just living—is harder than ever before, but we will weather the troubled times if everybody does his part. We must keep cheerful, carry our worries steadfastly and hold our nerve. Profits in these times are secondary—except for the munition maker and he will have to divide with Uncle Sam.

The success of the latest Liberty loan indicates that the American people are getting the habit of buying government bonds. If the habit of saving, of being thrifty, is acquired by the masses of the United States, it will be a great gain for the nation, but it will be a greater advantage if the loans prove that the people bought the bonds because they love their country. And that is just as logical a reason to ascribe to the flood of subscriptions to the last loan.

The kaiser and his band of outlaws accuse Americans of being "dollar-chasers." The Man who was all that Wilhelm is not, said: "Where your treasure is, there will your heart be also." Maybe, after all, we Americans are more patriotic than we ourselves realize.

Curtailed Production

After all the excitement over the reported cut in motor car production of 75 per cent it now develops that this was another one of the many foolish war-time rumors without any foundation in fact. Later and more reliable reports from Washington show that the passenger car manufacturers have agreed to cut down their production 30 per cent, or less than half what the irresponsible newspapers mentioned in their reports that now turn out to lack any vestige of truth.

As the matter is investigated by the higher government officials at Washington they are becoming more friendly in their attitude toward the automobile industry because of the realization that it is a necessity through furnishing transportation to merchandise and human beings. It is very unlikely that any of the existing plans to cut down the production of passenger cars will so seriously affect the retail automobile business as to cause serious alarm to capable motor tradesmen.

It is true that they will not have so many cars to sell perhaps as they had last year, or in 1916. But those men who have learned to sell new automobiles—without paying too much for the old ones that they purchase as part of so many of these transactions—on a business basis, and who do not neglect the profit opportunities in handling tractors, trucks and accessories need have little fear of their commercial future.

Highway Improvement

One of the biggest problems confronting the country today is that of highway improvement, and motor tradesmen are more deeply concerned in this than any other class. While it seems quite reasonable and to be expected that government officials and patriotic citizens generally should frown on improvements that do not seem to be vitally needed, such as re-surfacing the roads through parks, or repaving city streets that are not main highways for business vehicles, the fact remains that nothing should be allowed to stop the betterment of city to city thoroughfares.

This is especially true of roads that lead to the seaboard from any city or town where war materials of any kind are produced, whether they are motor trucks, uniforms, ammunition, guns or food. It is no longer a theory

that motor trucks are of tremendous aid to the immense problem presented by the transportation needs of this country in war time.

There is no longer any argument over the fact that the railroads are not able to do it all, and if motor trucks are to be expected to help the railroads it would seem to be good business and military economy not to hinder the building or betterment of highways over which motor trucks can run in all kinds of weather.

It has been suggested that the subject of passing on highway bond issues and the expenditure of road improvement appropriations be transferred from the Cap-

ital Issues Committee of the Treasury Department and put in charge of a board of truck transportation experts working under the supervision of Director General of Railroads McAdoo.

It is declared that this problem is more one of transportation needs than simply one of finance, and that men in touch with the transportation requirements of various sections of the country remote from the seaboard would be much better fitted to decide matters of this kind than bankers whose knowledge of transportation is often limited to that afforded by limousines and private cars attached to fast railroad trains.

Shall We Shoot the Trumpeter?

By MELVILLE DAVISSON POST

In the old fable the trumpeter captured by the enemy prayed consideration because he bore no arm, but he was answered that he incited the soldier to battle and was therefore equally dangerous. The policy of the enemy was sound. The trumpeter was an effective belligerent.

I think the German Government would consider our newspapers and periodicals as the most dangerous element of our fighting force. I think the Kaiser would rather shoot these belligerents than any other. And one can see the reason.

But for our magazines and newspapers America could not have been awakened; but for them it cannot be kept aroused to the impending peril of German world dominion.

Insidious German propaganda would lull the country to slumber but for the blare of these never ceasing trumpeters.

Beyond question it would be wisdom for the Kaiser to shoot them. But is it wisdom for *our own government* to shoot them? And they are effectively shot if an unwise revenue postal law drives them out of existence.

The staggering cost of paper and the unparalleled advance in labor and the price of every printing material, have removed any question of profit. This immense patriotic industry can hardly maintain itself; to now burden it with a heavy revenue tax and increased postal rates, is to decimate this arm of our fighting force. All the little magazines and newspapers must stand up against the wall, not

for the Kaiser's bullet, but for our own.

We must cheerfully bear the burden of this war; we must bear it to save ourselves from the murderous Hun in his amuck of frightfulness. But can we not distribute the weight of this burden so it will not entirely crush to death little newspapers and magazines?

The spirit of every one of them is fine and noble. They are so many more trumpets blowing all over the land; calling everywhere to every man; awakening the nation, firing it, steeling it, uniting it into one common determined purpose.

Surely we can find some way to rearrange this burden so the trumpeter can live!

Write to your Senators and Congressmen in protest against this destructive and disastrous postal "zone" law!

Among the Manufacturers and Executives.

J. V. Thomas has been promoted from assistant sales manager of The F. B. Stearns Co., Cleveland, to be general sales manager.

Owen Moynihan has become general sales manager of the Amazon Rubber Co., Akron, O. His place as New York district manager has been taken by Fred H. Findley.

F. C. Brown, recently appointed sales and advertising manager of the Sanford Motor Truck Co., Syracuse, N. Y., was formerly district sales manager for the Chase Motor Truck Co. He has had both sales and engineering experience in the truck field.

The William R. Johnston Manufacturing Co., Chicago, makers of the Johnston beveled plate glass curtain window, has established a special service to automobile manufacturers. Louis N. Gay, for twelve years head of the Consolidated Auto Top Company, of Cleveland, Ohio, has joined the Johnston company and will be at the service of any manufacturer desiring advice on the designing and construction of tops.

Gould Allen has been placed in charge of the Detroit office of Thomas J. Wetzel, of New York. The firms which Mr. Wetzel's organization represents are as follows: Brown-Lipe Gear Co., Syracuse, N. Y.; Buffalo Pressed Steel Co., Buffalo, N. Y.; Detroit Curled Hair Works, Detroit, Mich.; Harrison Radiator Corporation, Lockport, N. Y.; Iron City Spring Co., Pittsburgh, Pa.; Parish Mfg. Co., Reading, Pa., and Schwarz Wheel Co., Frankford, Philadelphia, Pa.

St. Clair Couzens, sales manager of The Olympian Motors Co., Pontiac, Mich., has appointed J. P. Vane, of San Francisco, western district manager for the Olympian line. Mr. Vane has been connected with the automobile industry for the past 12 years.



Louis N. Gay.



F. C. Brown.



Owen Moynihan.



Fred H. Findley.

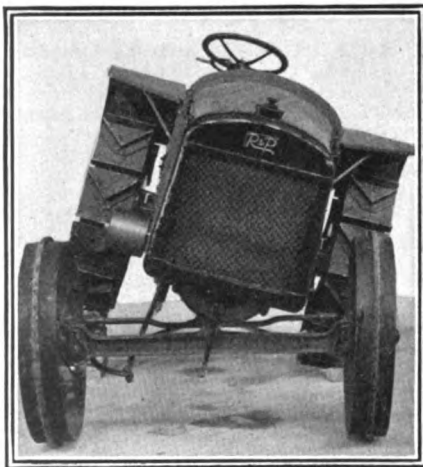
Tractors and Farm Lighting

New Alma-Made Tractor Has Two Novel Features

Rear Axle Has Large Internal Gear Reduction— Wheels Like Italian War Tanks

Two of the novel features of the R. & P. tractor just brought out by the R. & P. Tractor Co., of Alma, Michigan, are the rear axle with a large internal gear reduction just forward of the differential and the relatively small P-T pad wheels.

The designers claim an important advantage in the axle in that, by the internal gear reduction between the transmission and axle proper the necessity of a large bull gear is eliminated, along with the undesirable features of having this bull gear next the rim of the drive wheels, where it is exposed to mud and dust. In the R. & P. axle the design permits a compact arrangement with all gears enclosed and protected from dust by felt washers; and, being of a special internal gear Torbensen type, the benefit of a solid I-beam load axle is secured.



R. & P. tractor with P-T pad wheels.

The P-T pad wheels are the invention of two Italian engineers, Pavesi and Tolotti, and are the same design as employed on military tractors in the Italian army. The wheel is of the self-laying track type, and differs from others in that the pads are not pivoted in the wheel rim, but are simply held against it by two springs and suspended between two rolls. There is a maximum area of two pads on the ground at the same time; and the wheel rim simply rolls over the track on the pads without causing them to move, thus avoiding any milling or scraping in going over pavements.

Because of the increased efficiency over

the ordinary friction wheel a much smaller diameter drivewheel can be employed, allowing a low center of gravity and the relatively narrow tread so desirable in tractor design. Other features are the hitch suspension, which is attached to the frame by four members, equally distributing the load throughout the chassis. A compression coil spring absorbs shock and vibration between tractor and load, and the hitch can be adjusted to any desired height between twelve and twenty inches, wherein are many advantages.

To aid in maneuvering the tractor into proper alignment with power-driven machinery the pulley, which when not in use may be removed and the shaft covered with a cap, is placed on the same side with the steering wheel. Flexibility is obtained through a pivoted front axle. The fuel tank is located under the hood at the rear of the motor, with a filling cap directly on top. The carburetor is equipped with a Wilcox-Bennett air cleaner.

Maximum height is 60 in.; width 65 in.; wheel base 70 in.; turning radius, 11 ft.; length 108 in.; rating 12-20. Equipped with Waukesha motor 3 3/4 by 5 1/4, Waukesha governor, Eisemann magneto, 9 gal. armored radiator and Fuller selective tractor transmission. Speeds, three forward and one reverse, weight 3,500 lbs.

While not all of the almost six and one-half million farms in this country offer tractor sales opportunities the total agricultural capital can be realized when it is remembered that the average value of each farm is MORE than six thousand dollars.

**You ought to know if you
can sell tractors in your territory.**

AMONG MANUFACTURERS AND EXECUTIVES.

A. J. Banta has been appointed general manager of the Maxwell-Chalmers factory branch in Chicago which the Maxwell Motor Company, Detroit, recently bought from Harry Newman, former Chicago distributor.

Wesley Deem, who was production manager of the Columbia Motors company, of Detroit, has been appointed production manager of the Lane Motor Truck company, of Kalamazoo, Mich. L. W. Hamilton, general manager of the company, made the announcement.

A corporation known as Pro-Mo-Tor Fabricating Corporation has been formed under the laws of New York for the purpose of exploiting the Herz plug and other specialties made by Herz & Co., of New York. Its president is Russel A. Cowles, president of the Ansonia Clock Co., Metals Trading Corporation, and vice-president of Ansonia Brass Co.; Gustave L. Herz remains as vice-president and general manager; Edward S. Rothschild, president of the Public National Bank of New York, is treasurer, and Mark Eisner, secretary and counsel. Benjamin Liseberger, the metals magnate, is the remaining director.



This photograph shows one of three complete truck loads of rabbits which were brought in in one day at Caldwell, Idaho.

The ranchers around Caldwell started a drive this day and the result was over ten tons of rabbits killed. These were sold at 25 cents each and the proceeds donated to the Red Cross.

Three Denby trucks furnished by the Denby dealer in Caldwell were used in this work.

SELL WHAT YOU CAN GET IS ADVICE TO CAR DEALERS

(Continued from page 13.)

owns the power plant in the form of an old passenger car gathering dust in a barn or garage. In commercial parlance, part of his investment HAS been made. With the additional outlay of \$350 he will have a dependable, economical motor truck with a carrying capacity of 1½ tons.

Not only has part of the investment been made, but in many cases, the prospective buyer does not even realize that this is true. True, he owns an old passenger car but

until the seller of the Truck Maker talks to him, he had been regarding his old touring car or roadster in the guise of a liability.

It is most decidedly an asset. All that is needed is for the motor truck dealer to explain this fact and orders will come. These orders will go far, and should even better the absence of profits that must follow scarcity of new passenger cars to sell.

But whether or not they handle the Truck Maker, my word to American automobile dealers at this time is:

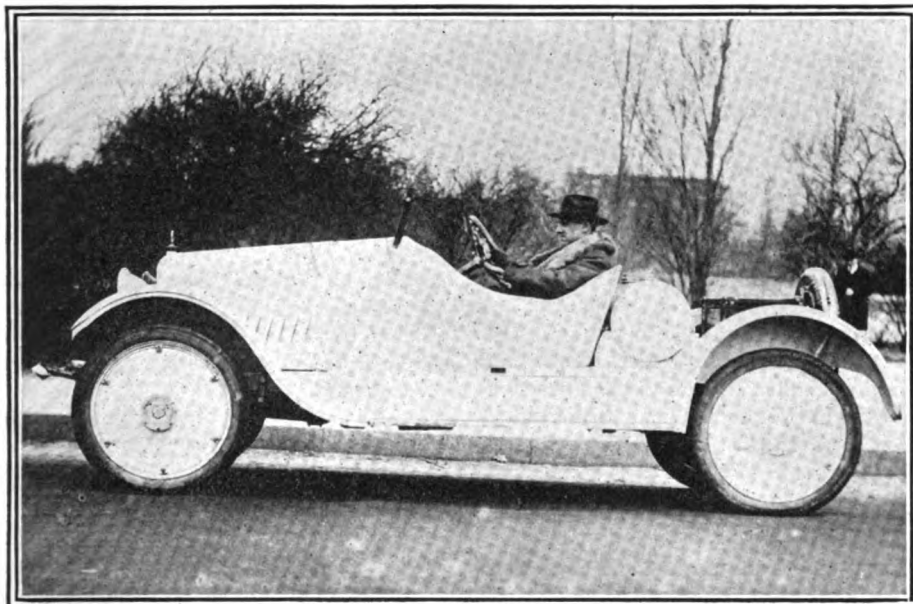
Sell SOME kind of a truck.

Boston Dealer Builds Special Publicity Car

A very unique type of car is being used by Bryant G. Smith & Sons, New England distributors for Elgin cars, in demonstrating the power and speed of this light six. President Smith is quoted as saying:

"Bradstreet's" (Commercial Directory) has compiled statistics about firms which never advertise. It says 84 per cent of failures belong to this class.

WHAT CLASS DO YOU BELONG IN?



Elgin Boston Distributor's "Publicity" Speedster.

"While the Elgin factory has never aimed to build a racing car, the standard models have won such high honors the past year in many races entered in

various parts of the country that speed has proven to be one of its high qualities of merit."

For advertising reasons, Mr. Smith has had this special speedster model painted white on one side and the standard color on the other, including the disc wheels, which on the whole makes a very attractive job. It is proving to be a very good publicity stunt.

The garage owner or automobile dealer who clings to the less efficient and more costly method of "push" with any part of his selling cost which could more profitably be spent in creating a demand for accessories, deliberately handicaps himself in competition with the garageman or automobile dealer that utilizes to the full the more efficient and less expensive method of "pull."

Success Assured for Second Automotive and Accessory Show

(Continued from page 14.)

the tractor manufacturers will have their vehicles on display when the show is opened.

Mr. Duffield acted as toastmaster, and made the following statement of the purpose of the Automotive and Accessories Exposition:

"To bring together those elements of the automotive industry that are commercial necessities, conservers of man power, units of transportation which bridge the gap in railroad facilities, and stimulants of broader agriculture;

"To bring to the public mind the many phases of aid to our government which automotive industries play, such as increasing the supply of food product, broadening the scope of our present distribution system and bringing about a system of permanent public roads that are military necessities;

"To show the manufacturer of automotive accessories the broad market which the truck and tractor industry represent;

"To bring the truck, tractor and accessory manufacturer into closer relationship with the jobber and dealer;

"Such is the broad purpose of the second annual Automotive and Accessories Exposition, which will be held on Chicago's Municipal Pier from September 14 to 21, inclusive.

"Trucks and tractors are instruments of war which apply to the fields of war and equally so to the maintenance of our forces by working the fields and distributing the produce at home. The exposition will be the first of its kind to be held since these two branches of the automotive industry began to show their strength as war machines. The second annual Automotive and Accessories Exposition will be a broad and comprehensive interpretation of what these industries mean to the nation, corporations and individuals."

How to Make the Shop Pay

Dealers Decide to Eliminate Free Service to Car Buyers and Bind Themselves by a "Gentlemen's Agreement"

By E. B. HINRICHSEN

Mr. Wilton started his campaign among the other managers immediately. He was easily the foremost dealer in the city and the others were more willing to listen to him than they would have been to any other.

He found all the other dealers and managers apparently eager to find a way out. They had, like him, been maintaining expensive service departments and all realized that, conducted as they had been, they were a losing proposition. All of them were willing to enter into an agreement at to the amount of free service to be given. It is true, they had different ideas, but Mr. Wilton advised them to look over their shop records, if they had any, and to talk with their mechanics. After they had done this, some of them were in favor of cutting off the free service altogether. It was something they had never looked into carefully before and the cost scared them when they realized how much it really was.

Things finally came to the point where they were all ready to agree to whatever the majority wished. Then Mr. Brown took up with Mr. Wilton the problem of what means were to be employed to be sure that each dealer adhered to the agreement.

Mr. Wilton was inclined to think that a gentlemen's agreement would be sufficient, but Mr. Brown had other ideas. He had naturally made a close study of human nature during his business career. He knew how many men were prone to extend favors to personal friends and how strong the temptation was to stretch things a trifle in order to make a sale. He realized fully that, while occasional deviations from the rule might not do much harm, they would gradually lead them all back to the old conditions.

It was a knotty problem. He finally had to give in to the idea that the only thing to be done was to take their words for it and trust to their common sense. He did so under protest, however, and only when he was sure that he could think of no other plan.

Bill Is Consulted.

Bill had been very busy toward the end of the conferences and had not had much to say. He had been consulted frequently from time to time by both Mr. Wilton and Mr. Brown and had been able to give some good ideas as to prices, etc., but had really not been on the inside. He drove

by Mr. Wilton's house to take Mr. Brown home the night that the general agreement was reached and to him Mr. Brown confided his troubles and fears.

"I tell you, Bill," he said, "it won't work. They will all stick to it for a while and then there will be little variations from the rule. It won't amount to much at first but it will soon grow. It won't be long after that until there will be big deviations and then pretty soon they will all be back at the old game. It can't be avoided. When you get eleven concerns together on an agreement of that kind, you are bound to find two or three of them who will turn out to be black sheep. There ought to be some way to hold them to it."

"Could not an agreement be signed by them all," asked Bill. "Some kind of a contract that they would do so and so and some kind of a penalty for violations?"

"I don't think that could be done, Bill. In the first place, I do not think such a contract could be made binding legally, and in the second place it would be hard to prove violations. No. All I can see to do is to take a chance that they will all play fair. I may be mistaken in thinking that they won't. It is possible that I am. They seem to be a fine set of men and they are certainly enthusiastic over the proposition at present. I hope I am mistaken. If they know what is good for them they will play the game right. It will mean money in their pockets in the long run."

Shop Men Might Help.

"Maybe I can get the shop men together," suggested Bill. "If we can get up some kind of an organization and make an agreement the same as the managers it might help some."

"It would be a good thing to do and it would help some, but it doesn't seem to settle things safely. It would do some good though. A manager would not be so quick to tell the shop to go beyond the contract if he knew the shops also had an arrangement. I am afraid, however, it would come to the same thing in the end. You know yourself how it would be if Mr. Wilton were to ask you to stretch a point. He has always been mighty nice to you and has done you a lot of good turns. You would do as he asked and say nothing about it. Is not that so?"

"I guess so," replied Bill, "but I don't know what else we can do. It is a start, anyway, and it may work out better than you think. I would not think they would

go against their own interests in that way. Still you never can tell. I have been thinking about a little organization among the mechanics for some time. Do you think there would be any objection? Of course, I don't mean a union or anything like that, but more of a business and social organization. We need to get together on lots of things."

"I'm sure I don't know who would object, Bill. Go to it, if you think it will help any."

"I think I can see where it will do us some good. Most of the other fellows are in favor of something of the kind. Do you mind if I let you out at this corner? It's muddy down your street."

"Not at all, Bill, and I am much obliged to you for bringing me home. Get your brains to work and see if you can't beat us to a solution of this problem. There must be some way to get at it. It's your own idea, you know, and perhaps you can improve on it. Mr. Wilton thinks it is all right as it stands, but I do not feel safe yet."

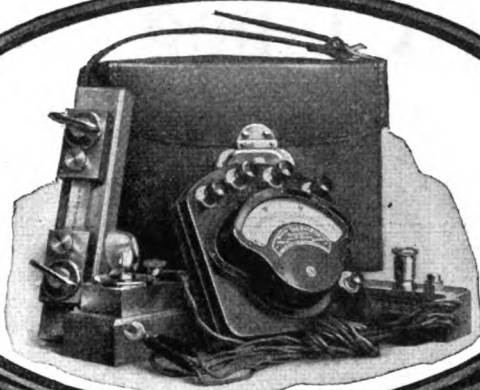
"Say, Mr. Brown," Bill said suddenly as Mr. Brown was getting out. "I've got a glimmering of an idea, but it's a mighty big one. Guess it is too big for me to put over though."

"Let's have it, Bill. The bigger, the better."

"Not tonight, Mr. Brown. It's late now and besides I want to think it over. It just now came to me. I'll have to do a lot of running around and talking tomorrow before I know whether it is any good or not. I'll tell you all about it in a day or so if it seems to have a chance for success."

ENTHUSIASM

Enthusiasm is the DYNAMICS of YOUR personality. Without it whatever abilities you may possess lie dormant; and it is safe to say that nearly every man has more latent power than he ever learns to use. You may have knowledge, sound judgment, good reasoning faculties; but no one—not even yourself—will know it, until you discover how to put your heart into thought and action.—J. Ogden Armour.



Bespeaking Patience

It has become necessary to advise prospective purchasers of the Weston Model 280 Garage Testing Instrument that deliveries can no longer be made promptly. Under present war conditions, there are unusual requirements which must receive our consideration in advance of commercial orders.

For this reason, we can accept your order only on the basis of delivery when possible. We suggest that you place it as early as you can.

Appreciating fully the needs of our customers and that the radical superiority of the Weston Model 280 Garage Testing Instrument is now well known to Garage and Service Station men, we promise to execute orders in the order of their receipt and as quickly as conditions will permit.

We are confident that this frank explanation of the situation will be accepted by prospective purchasers in the co-operative spirit in which it is submitted.

WESTON ELECTRICAL INSTRUMENT CO.
30 Weston Avenue Newark, N. J.

23 Branch Offices in the Larger Cities



Welding, Cutting and Brazing

Opportunities for Oxy-Acetylene Welder

By David Baxter.

Although the welding of different metals by the oxy-acetylene process has become almost universal, and the art has made tremendous advances in the last few years, it is yet in its infancy so far as adaptability and equipment are concerned. And that is not saying anything against the devices now in use. There are yet many possibilities in the fields of discovery and invention affording splendid chances for the torch operator who comes in daily contact with the many problems connected with welding. Especially if he is of an inventive turn and is not satisfied to rub along in the old rut, doing always what some one else has mapped out.

In this article an endeavor will be made to point the way to better equipment and methods, and show the welder ways of making more profit. Also to touch upon what may be done with the present torch outside of the repair business. It is the great aim of this modest effort to make the man at the torch think; to cause him to look at things from different angles. An involuntary hint has often been the direct cause of improving some of our greatest inventions. This is the way most of our great engines are evolved: by one man furnishing the idea for the other to improve.

The writer hopes to reach welders who have the chance to experiment; those who have the brains, and the means to work out some of the theories which the writer has no opportunity to do. Perhaps some of the ideas may be entirely impracticable in their original state, but only experiment will prove that. As has been said, the aim is to start someone to thinking.

The Welding Tip.

Take first the nozzle or welding tip; it would seem there are possibilities here for improvement. Or at least possibilities for the invention of torches or tips for special purposes. Such as torches for heavy duty or for use where great speed is desirable, such as heavy sheet metal welding.

Why is it not possible to change the shape and nature of the torch and tips? Is it not possible to construct a wide chisel-shaped tip having numerous gas outlets, or having one long narrow gas outlet? It would seem that a torch with a tip having a dozen outlets in a row would furnish great welding power. It would seem that this arrangement ought to permit the operator to weld a line of metal about twelve times as fast as with the customary torch. It would in reality be twelve torches in one, working in a compact line.

Perhaps this would be too many flames in the row. One could try it with less. The writer is merely furnishing the idea.

Varying the Idea.

A variation of the foregoing idea would be to have the flames in a circle instead of in a row. This would in effect be one large flame if all the small ones were regulated the same. And if this is possible why would it not be extremely useful on large, heavy jobs? Of course other things would have to be equal, such as pre-heating, filler, flux, etc. This too is merely a suggestion with the hope that it may start somebody thinking. After reading about the new gun the Germans have invented which shoots nearly a hundred miles, perhaps the next suggestion may not seem so wild after all.

An Oxy-acetylene Melting Furnace.

Why is it not possible to construct a special furnace patterned after the common cupola furnace, such as are used in foundries? Only a great deal smaller if necessary; instead of firing this furnace with coke, why not have an arrangement whereby a large oxy-acetylene torch entered the furnace where the air tuyeres are now located? Or say there were six or eight flames pointing toward the centre at about the location of the tuyeres. Or perhaps, the location would have to be different. That would also be a matter of experiment. But if possible it would furnish a compact rapid melting furnace for the melting of iron or other metals. Perhaps it would furnish a handy furnace for use in the reduction of aluminum.

Making Castings With the Torch.

Another opportunity seems to be in the idea of making small castings with the acetylene torch. If it is possible, by some new arrangement or manipulation of the flame, to melt a quantity of metal so that it will flow or fall from the filler rod at one drop, it is possible to make small castings such as door keys, gun hammers, etc. If it is possible to get an ounce or so of the filler rod in a fluid condition so it will drop from the end of the rod into the mouth, or gate, of a small mold, and still be hot enough, it will cast or run any small article. The chief problem seems to be to get enough metal fluid to do so without burning the metal. The torch operator who accomplishes the task will find plenty of small castings to make.

Practical Opportunities.

Now let us turn from the speculative to the practical. While the preceding statements are more or less theories, there are many other opportunities for the welding plant owner or torch operator outside of the mere welding of broken parts. An up-to-date welding outfit is a complete manufacturing plant within itself. It is the

wherewithal to cut the metal up, and then to fasten it together again in a different shape. Or to fasten together parts made elsewhere.

There are numerous articles which the welder may manufacture. And he does not have to compete with the large factories to any great extent. Of course, it may not be possible to manufacture great quantities of a given article in competition with presses and dies. However, to advise this is not the object of this exposition. The object is to show the welder ways of adding to his income and keeping the torch busy. There are several things in his favor. First there is the item of material; there is scarcely a welder who may not have access to a junk pile. Here is a supply of material from which he may choose the material to make many things. And the wrought iron or steel will be just as good for the purpose as new metal, and too, at half the price.

Then there is the item of time. He will be able to deliver his product quicker than to wait on large factories. Again, there is the being able to be located right among his customers, thus doing away with expensive salesmen, advertising, books, etc.

Manufacturing.

One profitable line is the making of fire escapes. These may be made almost entirely with the welding and cutting torch. In this connection mention might be made also of metal stairs, balconies, gates and ornamentation.

Tanks and metal containers such as city garbage and trash cans offer another opportunity for the welder. The home town and its neighbors are the market. These cans can frequently be made of second-hand material which is later given a coat of paint.

Then there are metal park-seats, swings and amusement devices. These are readily made over standard design or after original plans.

The ingenious welder can design and manufacture a line of devices for use on the farm, such as hog-troughs, litter-carriers, feed-cookers, harrows, chutes, etc.; many of these may be made of junk metal. Hay-handling machinery may also be made of old pipe and junk rods.

If the welder owns the patent to a simple device that may be made of sheet metal he has the opportunity to make it comparatively cheaply and easily. With the aid of templates and the cutting torch he may cut out almost any manner of shapes. These may then be welded together if necessary with the welding torch.

Special Work.

There is yet another class of opportunities for the welder. This also lies outside of repair work or cutting. These

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If you stop to consider, Mr. Garageman, the vital necessity of investing your money in **quality** equipment there is only one compressor you will buy—GLOBE.

Globe Air Compressors are recognized throughout this and other countries as dependable, **economical** and **efficient equipment**.

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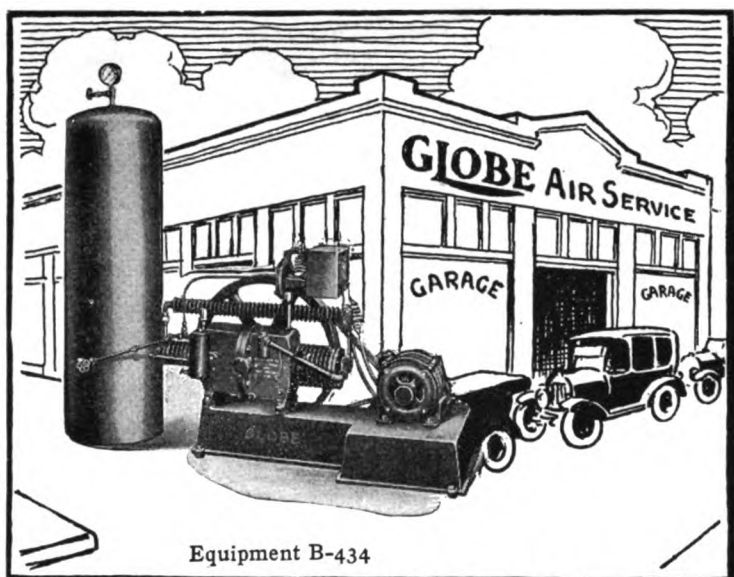
The GLOBE Unloader protects the motor against accidents and also protects the customer's tires by insuring oil free air.

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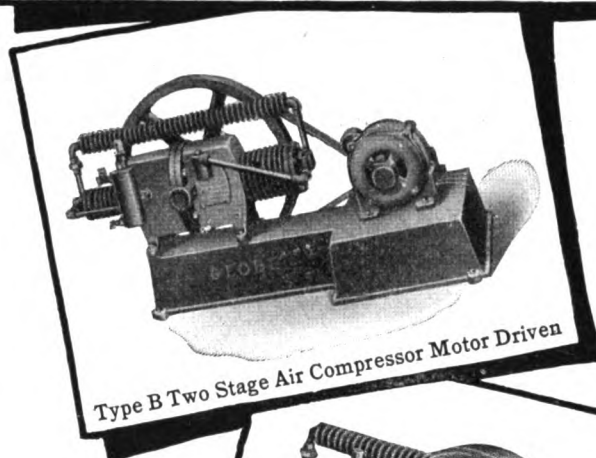
Order yours now and give your customers the service that pleases.

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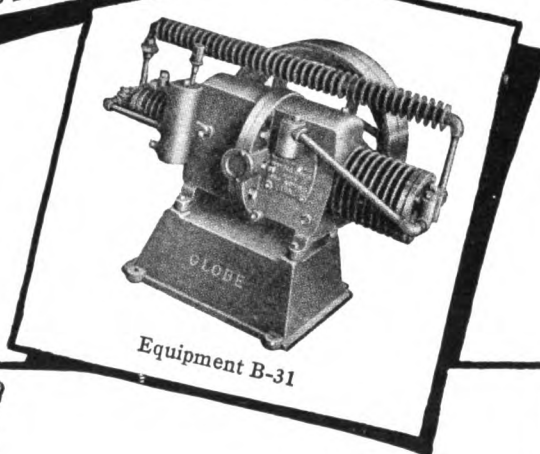
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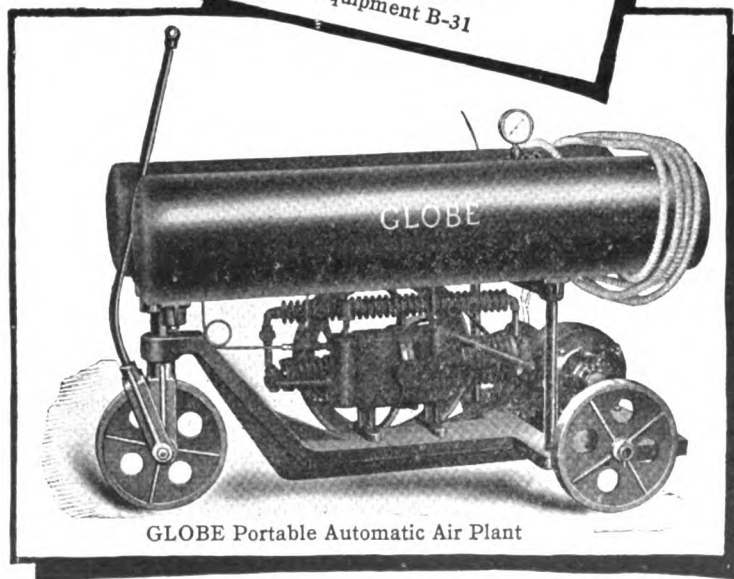
Equipment B-434



Type B Two Stage Air Compressor Motor Driven



Equipment B-31



GLOBE Portable Automatic Air Plant

opportunities for keeping the plant busy may be classed as special work.

Almost every town has some special work to which the torch is applicable.

As a Cleaner.

The oxy-acetylene torch is being successfully used in cleaning boilers, tubes, or vats, where a scale deposit exists. The cleaning is accomplished by passing the flame over the surface of the scale, causing it to expand rapidly, while the boiler is yet comparatively cold. This sudden expanding of the scale causes it to pull loose and crack, when it may be removed much easier than by the usual method. The same principle applies for other kinds of cleaning, such as the cleaning of rust, grease, or paint from all sorts of metal work. Either of these may be removed quite readily by passing the welding flame over them.

Removing Calking From Pipe.

Another use for the flame is in removing the lead calking from sewer or water pipe, as in cases where water mains have to be repaired or moved. The flame is passed around the joint, where it burns out the waste packing and causes the lead to melt and run out at the bottom of the joint. The lead may be saved and used over again, or sold. The action is so rapid there is little or no danger to the metal of the pipe.

As a Carbon Remover.

Perhaps the most common special use for the torch is that of removing carbon from the cylinders of gasoline or kerosene engines. This is done by bringing the tip in contact with the carbon deposit after first igniting the carbon with a match or bit of burning waste. As fast as the oxygen is applied to the burning carbon it will consume itself. In this process the welding flame is not used. Only the oxygen pressure is turned on. The high rate of oxidation is caused by the excess of oxygen furnished. A special carbon burning torch is supplied for carbon removing.

Hardening Wearing Surfaces.

The oxy-acetylene torch is used to harden the wearing surfaces of parts of machinery or tools. A white, glass hard surface may be imparted to gear teeth, shafting, friction clutches, etc., where a wear-resisting quality is desired.

One method is to immerse the article in cold water leaving the place to be hardened so that it is barely covered with water, say a sixteenth of an inch of water. Then apply the welding flame, which should be regulated to its hottest temperature. The pressure of the gases will blow the water back away from the spot to be hardened. Then heat the surface, where the water has been blown back, to near the melting point. Not near enough, however, to ruin the smoothness of it, but just below the blistering stage.

Keep the flame moving around in tiny circles, and as soon as the spot is hot enough work the flame gradually forward to another spot, adjoining and lapping over

the first. As soon as the flame moves forward the water closes over the heated place. This causes it to cool quickly with a resulting hardness.

Follow this procedure throughout the entire job. Heat a space, then allow the water to flow over it, as soon as possible. That is the principle of the thing. Heat the surface rapidly, then cool it rapidly; the heating causes it to expand and the rapid cooling causes it to contract a great deal faster than normal. This rapid contraction is what does the business; it causes the grains of the metal to draw together, to pack themselves tightly as it were. The tighter the packing the smoother and more wear resisting the surface.

Other methods may be employed such as pouring water over the heated spots, or sopping them with wet rags. However, it is done the principle remains the same: rapid heating and rapid cooling.

Restoration of Steel.

This opportunity entails considerable study and a degree of expertness in many cases beyond the average welder. An explanation of the methods employed would require an article almost as long as this one so we will not attempt to cover the subject at this writing. It will be mentioned here merely for the benefit of those who care to go into the subject deep enough to obtain text books and study. It consists in a word of restoring steel that has been crystallized or detempered. It may be restored to its normal state by a certain heat treatment.

The foregoing are a few of the opportunities for the torch operator. Many others may be developed with a little thinking. Keep the mind busy and keep the torch busy. Remember the business is just in its infancy. See what you can do to promote it.

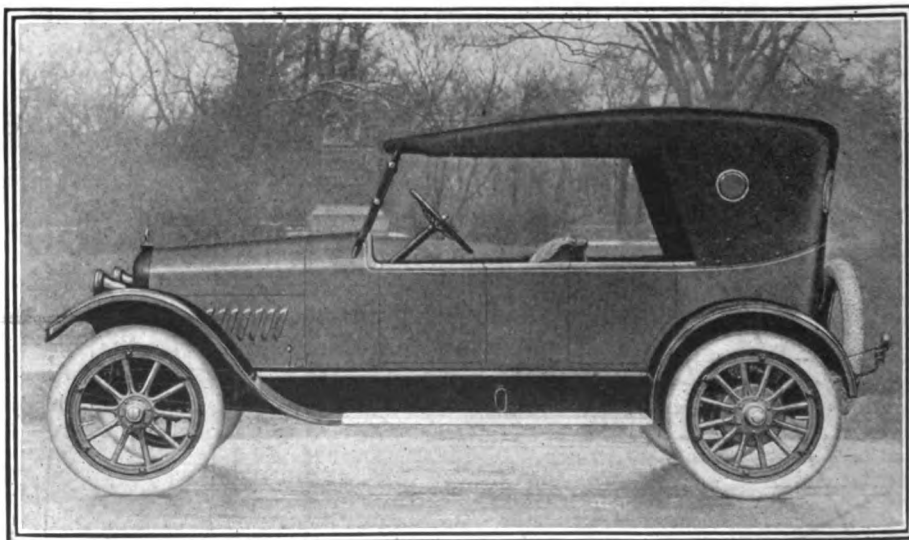
"Military Scout" Model Made by Elgin Company Successful Journey of War Car with Sealed Chassis Inspired Design of New Product

The Elgin Motor Car Corporation, Chicago, is building a new 4-passenger model which will be known as "Military Scout." As will be noted by the illustration, this new Elgin typifies what is sometimes known by the trade as a sport model. While it is a 4-passenger car it will comfortably carry five people.

The name "Military Scout" is said to

sion sealed during the entire journey.

The crew of the Elgin six War Scout was appointed by Secretary of War Baker to report road conditions for military purposes. This service to the government and the performance of the car inspired the Elgin Corporation to design this new "Military Scout" model embodying units of construction which




Elgin Six "Military Scout."

be very significant in view of the record recently made by the Elgin six War Scout, a standard touring model, which established a new record in a sealed chassis run from Chicago to San Francisco and return (a distance of 6,202 miles) with hood, clutch and transmis-

have proven best adapted to give the purchaser a powerful, efficient and economical motor car at a popular price.

The body is of very distinctive design of straight-line type, beveled edge and full size rear fenders. The price is \$1,195 f. o. b. Chicago.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left; padding: 2px;">CLASS OF SERVICE DESIRED</th> </tr> <tr> <td style="padding: 2px;">Fast Day Message</td> <td style="width: 50px;"></td> </tr> <tr> <td style="padding: 2px;">Day Letter</td> <td></td> </tr> <tr> <td style="padding: 2px;">Night Message</td> <td></td> </tr> <tr> <td style="padding: 2px;">Night Letter</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 2px; font-size: 0.8em;">Patrons should mark an X opposite the class of service desired; OTHERWISE THE TELEGRAM WILL BE TRANSMITTED AS A FAST DAY MESSAGE.</td> </tr> </table>	CLASS OF SERVICE DESIRED		Fast Day Message		Day Letter		Night Message		Night Letter		Patrons should mark an X opposite the class of service desired; OTHERWISE THE TELEGRAM WILL BE TRANSMITTED AS A FAST DAY MESSAGE.		<div style="font-size: 1.5em; font-weight: bold; margin-bottom: 10px;">WESTERN UNION</div>  <div style="font-size: 1.5em; font-weight: bold; margin-bottom: 10px;">TELEGRAM</div> <div style="font-size: 0.8em; display: flex; justify-content: space-around;"> NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT </div>	<div style="font-size: 0.8em; text-align: right; margin-bottom: 5px;">Form 1906</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Receiver's No.</td> </tr> <tr> <td style="padding: 2px;">Check</td> </tr> <tr> <td style="padding: 2px;">Time Filed</td> </tr> </table>	Receiver's No.	Check	Time Filed
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Send the following telegram, subject to the terms on back hereof, which are hereby agreed to

January 4, 1918

To Users of National Cash Register Equipment in America

Have you found that the installation of National Cash Register equipment has assisted you in carrying out the Government's recommendation for the conservation of labor, in deliveries, clerk hire, auditing, etc.? Your experience will be valuable to other merchants. Will you please wire me fully at my expense regarding this so that we may pass it on to them?

THE NATIONAL CASH REGISTER CO.,
John H. Patterson, Pres.

What American Business Thinks of N. C. R. Service in War Time

As an aid to compliance with the Government's request for the conservation of man power and motive power, the N. C. R. System has received a striking endorsement from American business.

The following excerpts from the hundreds of replies to the above telegram are from department stores, confectioners, butchers, stationers, druggists, grocers, garagemen and many more lines of business.

"We recommend National Cash Registers to any who wish to conserve."

"Cash registers save in auditing and cashier service."

"National Cash Registers and Electric Credit System cause customers to carry packages instead of asking for delivery."

"We recommend the cash register system to every merchant who desires efficiency and economical service in his store."

"The cash register gives correct records and is a great labor saver."

"Without registers we could not handle the business with present force."

"Your cash register has been a great help in systematizing our reports and records."

"Your product is essential to the conduct of our business."

"Cash registers speed up service to customers."

For further information fill out the coupon and mail it today.

Whatever your business,* the N. C. R. System will help to put it on a war-time efficiency basis.

Dept. 3304 National Cash Register Company, Dayton, Ohio

Please give me full particulars regarding your up-to-date system for a Garage and Automobile Accessory Store.

Name _____

Address _____

Mechanical and Engineering Problems

Eight Cylinder Troubles

Question: We have an Oakland "8" in our town and no one seems able to keep it going. It ran well when it first came, but now it seems to get worse all the time. The owner has tried out all the regular mechanics in the town and some of the amateurs. He has now come to the point of trying to do his own work. I believe that if I could get a better understanding of this car that I could land his business. This is a small place and we have very few "sixes" and only this one "eight." The owner took it to a city near here once for repairs and said it did all right for a while and then blew out one of the head gaskets. He has replaced the head gasket two or three times, but it always blows out.

I wonder if you will answer the following questions in regard to this car:

1. Is the engine a good one and one that gives good service, or is it one that falls down after a few months' use?
2. What is the firing order of the cylinders?
3. Should the exhaust of the engine sound like a four or should it have the kind of overlapping sound like the six?
4. Does one carburetor for the whole engine do the work, or would it be better with two?
5. What do you suppose causes the gasket to blow?
6. What is the best way to go about finding a missing cylinder in this engine? I can't tell by shorting plugs in the usual way.
7. Will you state in general what troubles this engine is most subject to and how to clear them?

A. L., Illinois.

Answer: It seems to me that you are letting this engine scare you. There is really nothing complicated about it and you will find it easy to clear trouble if you consider it as two separate four cylinder engines. I do not suppose that anything very serious went wrong in the first place. Probably a plug or two fouled or a valve got to leaking, just as might happen on a four or a six. I will try to answer your questions in regular order and make the information as clear as possible.

1. The engine is an excellent one. It is properly designed and well built. It has been thoroughly tried out both in tests and actual service and has proven satisfactory.

2. If I remember right, the firing order is 1-8-3-6-4-5-2-7. You will find it marked somewhere about the engine.

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Fredericksen Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

3. The exhaust is more like the four than the six, but is not exactly like the four, either. I imagine two four-cylinder engines running side by side exhausting through the same pipe and so timed that the cylinders in each engine fire alternately. This is the best comparison I can make.

4. If the various cylinders are kept equal in compression and condition, one carburetor is sufficient.

5. The gasket blows from one of two causes. Either it is not properly fitted or else the cylinder block head is warped. The fault is probably in the fitting of the gasket. You might try the cylinder head and also the top of the cylinder block with a straightedge and also examine them for blow holes before installing a new gasket, but I do not think you will find anything wrong there. When you put on the new gasket, be sure to tighten your bolts evenly. Do not pull one bolt tight and go to another one, but screw all the bolts in until they are against the cylinder head and then give each one about a half turn at a time with the wrench, going around all the bolts one at a time until all are drawn tight. While doing this, you might drive lightly on the head with a hammer and block of wood. After the bolts have been drawn tight for a few hours you might go over them again. Sometimes the gasket flattens out a good deal.

6. The best way to find a missing cylinder on an engine of this kind is to treat it as two four-cylinder engines, as I said before. Cut out one side by grounding all the spark plug wires on that side and run the engine on the other side. It will then run and sound exactly like a four-cylinder motor. If the side you are running on is all right, ground it and run on the other side. In this way you can easily locate a missing cylinder. The carburetor can also be adjusted for one side at a time, changing sides frequently until you get a good running mixture. Of course, all this is only until you get used to the sound of the exhaust. After you have worked with it for a while, you will find it as easy as a four to shoot trouble on.

7. I believe I have answered your seventh question pretty thoroughly in an-

swering the other six. This engine is not any more subject to trouble than any other. The only point I can think of is to be sure and use the lubricating oil recommended by the manufacturer.

Two-Cycle Query

Question: Was a two-cycle rotary or revolving motor ever built that would work? My partner says that it can't be done, but I am sure I saw one a year or so ago. I believe it was being demonstrated in order to sell stock in the company and was to be used for airplanes. I am almost certain it was a two-cycle, but it had some special features that other two cycles did not have. Could such a motor be made, and how was the one I saw made to run?

J— & L—, Indiana.

Answer: There have been a few two-cycle revolving engines built that promised to do fairly well, and most of them were demonstrated for stock selling purposes. If you will tell me just what the one you saw looked like and how it was mounted, etc., I can probably give you a detailed description of it and how it works.

Double Valve Motors

Question: Can you tell us what advantage there is in the double valve motor? Some builders claim great things for a motor built this way and we think that if they were so good, there would be more of them used.

G. & Co., Mich.

Answer: The advantages claimed are more power for the same piston displacement on account of the larger valve openings and a cleaner engine on account of being able to dispose of the burned gases more rapidly. They are also much more flexible than the single valve motors. Expense in building is probably the reason more makers do not use them.

Two Cycle Engines

Question: I noticed in one of your magazines some time ago that you had something on two cycle engines. I drive a car with one, probably because no one else in the garage will use it, but I don't know much about the engine. Will you tell me the following things that I would like to know?

1—How much more gasoline will a three cylinder, two cycle, 40 horsepower engine use than a four cylinder, four cycle, 40 horsepower engine?

"You don't have to buy from us, but you will"



Mr. Dealer and Garageman

If you assure the Automobile owner, throughout the country, that he can purchase all of his accessories through a well-organized chain of retail stores and that he will receive uniform quality and product without substitution or delay, he will become a customer of yours.

Retail chain-store corporations, as you know, are successful in every line.

Our business is the Automobile Accessory Business and is founded upon and governed by the methods which have been successfully employed in other industrial lines. These methods protect those who become one of us and elevate the motor accessory field to a plane approaching perfection, finally resulting in satisfied dealers and consumers.

Our Policy is

ECONOMY, EFFICIENCY and BETTER SERVICE

If you want to know what is necessary to become one of us—

If you want to know what you have to do to become one of us—

If you want to know why it will pay you to become one of us—

If you want to know what we do for you when you become one of us—

If you want to know how we increase your business—

If you want to know how and why our name will become a home-word to the motorists throughout the country—

If you are the man with enough foresight to grasp an opportunity and take advantage of it when it is presented to you—

Write Us for Further Information

MOTOR ACCESSORIES CORPORATION

H. J. Curtis, Genl. Mgr.

170 Broadway, New York

"You don't have to buy from us, but you will"

2—What causes explosions in the crank case?

3—What is the most common cause of trouble outside of ignition or stoppage of the gasoline line?

— Auto Co., Florida.

Answer: 1—In average use the fuel consumption will be between 30 and 40 per cent higher on the two cycle. It is impossible to say exactly without knowing the kinds of engines compared.

2—The explosions in the crank case are usually caused by a leakage in the intake screen. There is a fine mesh brass screen in the intake ports to prevent the flames from coming back. One or more of these screens is probably split.

3—The most common troubles with a two cycle engine are leaks in the crankcase, leaks in the main bearings, cylinders loose on crankcase, worn or loose piston rings, leaking check valves in the two port type and general cussedness.

When a salesman makes too large an allowance on an old car when selling a new one, he is displaying poor salesmanship. The successful, put-it-across salesman sells the new car so well that the allowance on the old car pales into minor importance. Boys, polish up your salesmanship kit.

When you save and buy WAR SAVINGS STAMPS you help make the world safe for democracy and at the same time make your financial future safe for yourself.

Big Truck Tires Help Make Fast Akron to Boston Trip

One of the most recent recruits to the Goodyear Tire and Rubber Company's cross country truck fleet operating between Akron and Boston made the trip between those cities in record-breaking time a few weeks ago. Carrying a capacity load of products needed by Massachusetts shoe factories, the giant carrier—a Packard—clipped eleven hours from the schedule established for this run.

The distance from the Rubber City to Boston is 740 miles. The Packard completed the journey in 77 hours elapsed time, 49 hours actual running time, at an average speed of 14.9 miles an hour for the entire trip. The huge pneumatic tires, 44 x 10 Goodyears, with which the truck is equipped, allow it to be driven safely over the mountain roads at touring car speed.

The Goodyear company was one of the first to recognize the need of inter-city hauling and its trucks have been traveling the Akron-Boston round trip of 1,540 miles for almost a year. The six trucks in this service carry finished products to the New England branches and return with tire fabrics from the company's mills at Goodyear, Conn. "Old John Packard," as Goodyear officials call the 5-ton pioneer of the fleet, has traveled 30,000 miles over the Boston and return route.

"War Savings Stamps mark an epoch in our national life."—Secretary of the Treasury McAdoo.

Official Bulletin Contains War Data

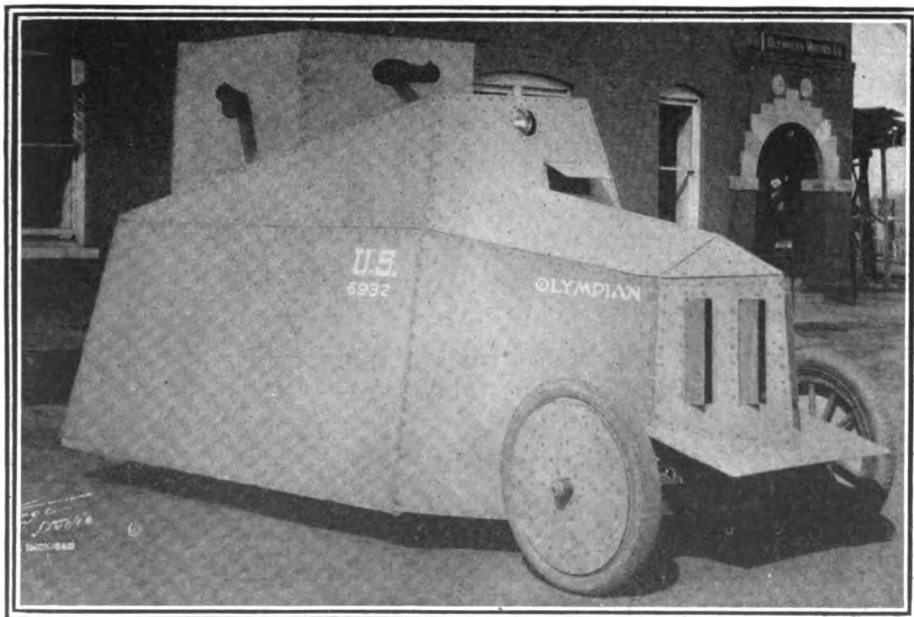
Owing to the enormous increase of government war work, the governmental departments at Washington are being flooded with letters of inquiry on every conceivable subject concerning the war, and it has been found a physical impossibility for the clerks, though they number an army in themselves now, to give many of these letters proper attention and reply.

There is published daily at Washington, under authority of and by direction of the President, a government newspaper—The Official U. S. Bulletin. This newspaper prints every day all of the more important rulings, decisions, regulations, proclamations, orders, etc., etc., as they are promulgated by the several departments and the many special committees and agencies now in operation at the National Capital.

This official journal is posted daily in every postoffice in the United States, more than 56,000 in number, and may also be found on file at all libraries, boards of trade and chambers of commerce, the offices of mayors, governors, and other federal officials.

By consulting these files most questions will be found readily answered; there will be little necessity for letter writing; the unnecessary congestion of the mails will be appreciably relieved; the railroads will be called upon to move fewer correspondence sacks, and the mass of business that is piling up in the government departments will be eased considerably.

Hundreds of clerks now answering correspondence will be enabled to give their time to essentially important war work, and a fundamentally patriotic service will have been performed by the public.



An Olymplan armored car was the big hit of the Third Liberty Loan parade held in Pontiac, Mich., April 9. Several hundred cars were in line, a large number of which were Olymplans.

The Olymplan armored body was built on the 1918 Olymplan chassis. It was the same type of war car as that used by the Allies during the first drive of the Germans and which so materially aided in turning the Boches preceding the battle of Marne.

It was designed by Douglas W. Petit of The Olymplan Motors Company, who spent a year in France on the Western Front with the American Field Service. This car was used in Michigan to help the Third Liberty Loan Drive.



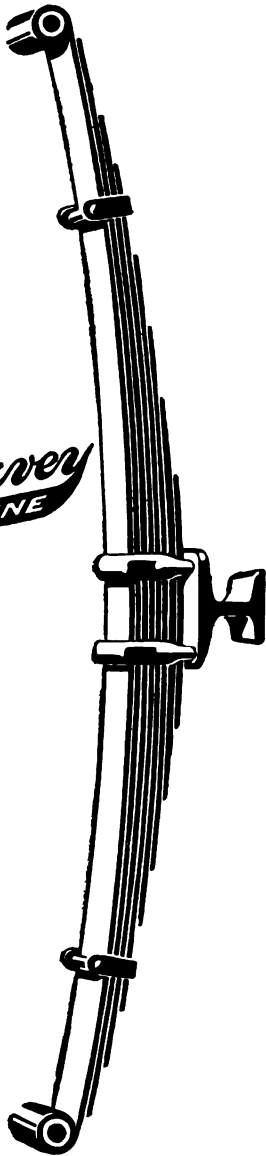
IN THE SERVICE OF OUR COUNTRY.

Charles Merz, who won much fame as a pilot of National racing cars, is now a captain in the United States Signal Corps.

Eugene Spooner, a former member of the editorial staff of The Automobile, now wears a U. S. Navy uniform. He is a son of F. Ed Spooner, editor of the Automobile World department of the Detroit Free Press.

Much time and energy are wasted doing things the way of long habit. With WISE direction the same amount of energy may produce double the effectiveness.

Why —



IT'S MONEY in your pocket when you can establish a reputation for rapid service among car owners in your neighborhood.

That is one reason why you should push Harvey Springs

Besides rapid service, the product you sell must be of good quality, honestly made.

That is another reason why you should push Harvey Springs

A product that has made a name for itself and has gained the good will of car owners is much easier to sell.

That is still another reason why you should push Harvey Springs

You will generally find that a product in which you, yourself place absolute confidence a product you feel sure of, is easy to dispose of at a profit.

And that too is a reason why you should push Harvey Springs

Satisfaction to car owners — satisfaction to dealers — that is the ideal combination.

And that is the final reason why you should push Harvey Springs

THERE'S A HARVEY JOBBER NEAR YOU — Write us and we will send you his name and address, and our latest catalog, giving complete specifications of over 900 different styles of Springs.

Write today — you may need Harvey Help tomorrow.

Harvey Spring & Forging Co.
922 17th Street
Racine, Wisconsin

Tire-Doh Makers Help Dealers Sell Product

No effort is spared by the Atlas Auto Supply Company to help garage men, car dealers and accessory men to dispose of their products after they have stocked them. This concern maintains a department for the purpose of furnishing window display ideas and suggestions, hanger cards and other advertising help to motor tradesmen who sell Tire-Doh and other Atlas specialties.



Tire-Doh Window Card.

One of these of the business accelerators furnished by the Atlas Auto Supply Company from its office in Chicago is shown herewith. This window or counter display card is 27x42 inches and is printed in five colors. One side of the card shows the package in which the Tire-Doh outfit is marketed, and emphasizes the facts that neither heat nor tools are needed to use Tire-Doh in order to fix damaged rubber goods.

The other side of the card shows the method of applying the Tire-Doh and has a space where the dealer can have his own name lettered on a neat little panel. There are good selling arguments on this side of the card, and mention is made of some of the different kinds of rubber goods that can be repaired with Tire-Doh in addition to its use for motorists. Some of these other articles include: hot water bottles, gloves, caps, boots, tubing, cushion and belting.

Advice to Users by U. S. Tire Company

- Don't waste mileage.
- Don't scrape your tires on the curb.
- Don't run in car tracks.
- Don't set brakes so quickly as to lock wheels.
- Slow up for bridge "edges" and crossovers.
- Don't let tires stand in oil.
- Don't neglect cuts in tread.
- DON'T RUN WITH TIRES UNDER-INFLATED.**

Unsurfaced Concrete Is Best Road for Truck Use

"Recent tests to determine the relative value of different roads show the resistance to tractive effort offered by unsurfaced concrete to be 30 pounds per ton, surfaced concrete 50 pounds, gravel 82 pounds, and dirt roads 99 pounds," says R. E. Chamberlain, truck sales manager of the Packard Motor Car Company.

"Using a 3-ton truck with a capacity load and a speed of 12 miles an hour over unsurfaced concrete as standard, the truck will make 7.2 miles per hour over surfaced concrete, 4.8 miles per hour over gravel, and 3.6 miles over dirt roads. This makes a relative cost of \$0.167, \$0.194 and \$0.207 per ton mile in the last three cases.

"A computation shows that if all roads traveled were gravel as compared with dirt the annual saving in operating America's 400,000 motor trucks would amount to \$70,200,000; if concrete as compared with gravel, \$167,400,000, and if concrete instead of dirt, \$237,600,000.

"Northern Ohio clearly shows how good roads are contributing toward the development of inter-city motor truck hauling. Several months ago, a traffic census on the Cleveland-Akron highway proved that goods were being hauled over that road in motor trucks equivalent in tonnage to one freight carload an hour. Since then trucking over this route has been increased substantially.

"The Cleveland-Akron-Canton Transfer Company is a good example of what the long distance hauling company is now able to offer shippers in the way of prompt, regular, and low-priced service. Operating a fleet of 19 Packard trucks, this company handles shipments between all important points in north central Ohio in surprisingly good time. When navigation is open, shipments are accepted in Akron late in the afternoon for delivery in Detroit the following morning."

Consider the difference in a season's work: Twelve acres to the credit of the team, if the horses can stand a ten hour day, and two hundred and ten acres plowed by the tractor in the same time. Don't forget that ten hours is the limit of endurance of a good horse and remember that the tractor can work twenty hours per day, leaving time for refreshments for men and to fill fuel and water tanks.

Do the farmers in YOUR territory know what TRACTORS will do for them?

Lawing Motorists to Safety Is Mission of Lens Makers

(Continued from page 21.)

The need for a broader and brighter light on country roads was studied. The solution was found in bending downward the glare or wasted upward rays of light on the road beside the main beam where it would illuminate the full width of the road with uniform intensity. Photometer tests of the Shaler Roadlighter have been made under every conceivable condition of night driving and its efficiency demonstrated beyond question.

One of the greatest illuminating engineers in the United States calls this new headlight lens the greatest safety device ever invented for motorists, for the reason that unless you can see plainly where you are driving, all other safety devices incorporated in an automobile are useless for the prevention of dangerous night accidents.

Graphic charts show which way the business is going.

WAR SAVINGS STAMPS DELIVERED TO YOUR HOME

Tear Out—Fill In—Hand Letter—Carrier—or Mail to Post Office

TO THE LOCAL POSTMASTER:—Kindly have letter-carrier deliver to me on _____ (Date) for which I will pay on delivery:

_____ \$5. U. S. WAR-SAVINGS STAMPS at \$_____ each
(State number wanted) (See prices below)

_____ 25c. U. S. THRIFT STAMPS at 25c. each.
(State number wanted)

Name _____

Address _____

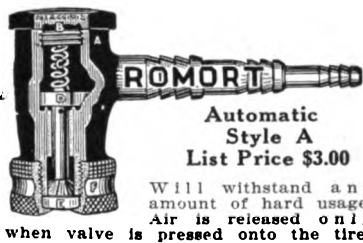


W. S. S. COST DURING 1918					
April	\$4.15	July	\$4.18	Oct.	\$4.21
May	4.16	Aug.	4.19	Nov.	4.22
June	4.17	Sept.	4.20	Dec.	4.23
W. S. S. WORTH \$5.00 JANUARY 1, 1923					

ROMORT SPECIALTIES

ARE GARAGE AND SERVICE STATION NECESSITIES

Save Air and Money by Using



Automatic
Style A
List Price \$3.00

Will withstand any amount of hard usage. Air is released only when valve is pressed onto the tire.

ROMORT Automatic AIR VALVES

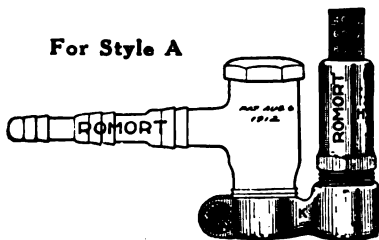
have no equal
for free air
stations.



Automatic
Style B
List Price \$1.00

Recommended for free air stations, requiring a small, inexpensive, but efficient device. Guaranteed air tight.

For Style A

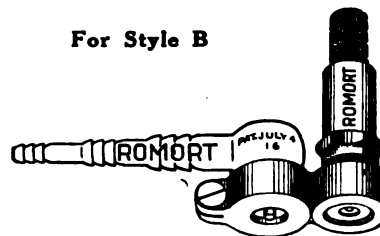


ROMORT TIRE TESTER ATTACHMENT

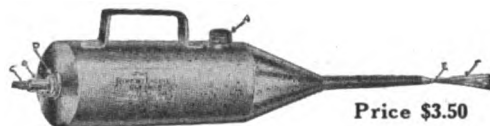
A Garage
Necessity.

List Price
\$1.50

For Style B



A device for attaching your gauge to either Style A or Style B Romort Air Valves. Gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and inflater combined in one. When ordering, state whether for Style A or Style B valve.



Price \$3.50

ROMORT Engine Cleaner

This device has no equal for cleaning the dirt and grease from automobile engines. A child can operate it, yet it does it work with a thoroughness that will satisfy the most exacting. The long spout reaches every nook and corner of the machinery.

We also manufacture straight and angle pump connections, tank connections and rubber washers. All jobbers carry ROMORT Specialties.

WRITE FOR LITERATURE

MANUFACTURERS
ROMORT MANUFACTURING CO.
OAKFIELD WISCONSIN

SALES DEPARTMENT
THE ZINKE COMPANY
1323 So. Michigan Ave. CHICAGO, U. S. A.

In the Truck and Trailer Field

Woman Is Highway Builder; Contractor-Husband in War Wife Learns to Drive Motor Truck and Bosses Big Force of Men in Road Construction

Woman's infinite capacity has been put to all sorts of tests by the world war. In Europe, women have taken up work which no one ever dreamed they were fitted for; in the United States we have yet to accustom our vision to women employed as

country and release men for the military service. The synopsis is as follows:

F. H. Davis, a young contractor living in Fresno county, California, obtains a \$59,000 road contract. He shows his wife the contract and they are in high feather

over the success of his bid. He starts his job with enthusiasm. A few days later when his wife, Hazel, takes his lunch to him, she also takes a letter which has just arrived. The letter is a draft notice summoning him to camp.

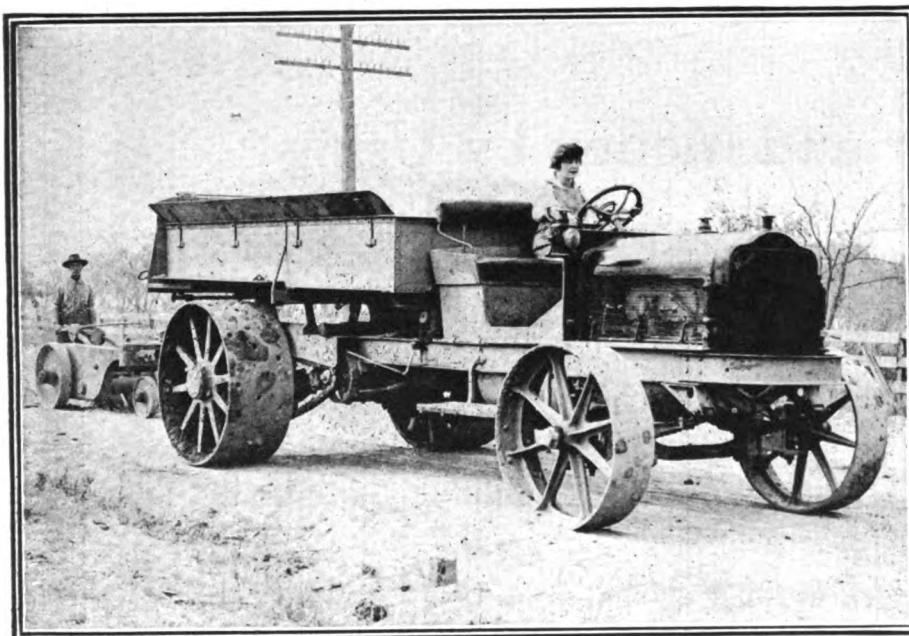
Davis is anxious and determined to serve his country, but is distressed by the prospect of being forced to abandon his road contract. The perplexity of his problem is suddenly lifted by the inspiration of his wife. Hazel ventures the suggestion that she can learn to operate the big White 5-ton truck and road machinery and carry the contract to a successful finish.

Mrs. Davis dons her husband's overalls and jumps on the truck. Davis shows her how to operate the different levers, and she drives off. After a few days' coaching she proves her ability to handle the machinery and boss the job. Davis leaves for war.

The construction crew is at first inclined to loaf on the job and take advantage of the "woman boss." But she does not countenance "slackers."

While her husband is being turned into a first class fighting man, Mrs. Davis goes on steadily with the work. She received the first payment on the contract—a check for \$10,000. She takes time to go to camp to see her husband and drives up in her car but is halted by a sentry.

Mrs. Davis discovers her husband sitting in a nearby tent and hails him. Davis runs out and embraces her, then inspects the car and indorses the contract check. She gives him a ride in the new car and bids him goodbye. The last scene shows Davis in a parade of troops about to entrain for France, and Hazel appears in a nearby window, bravely waving him adieu.



Woman driving White truck used in road building.

motormen, engineers, and at other occupations involving heavy labor.

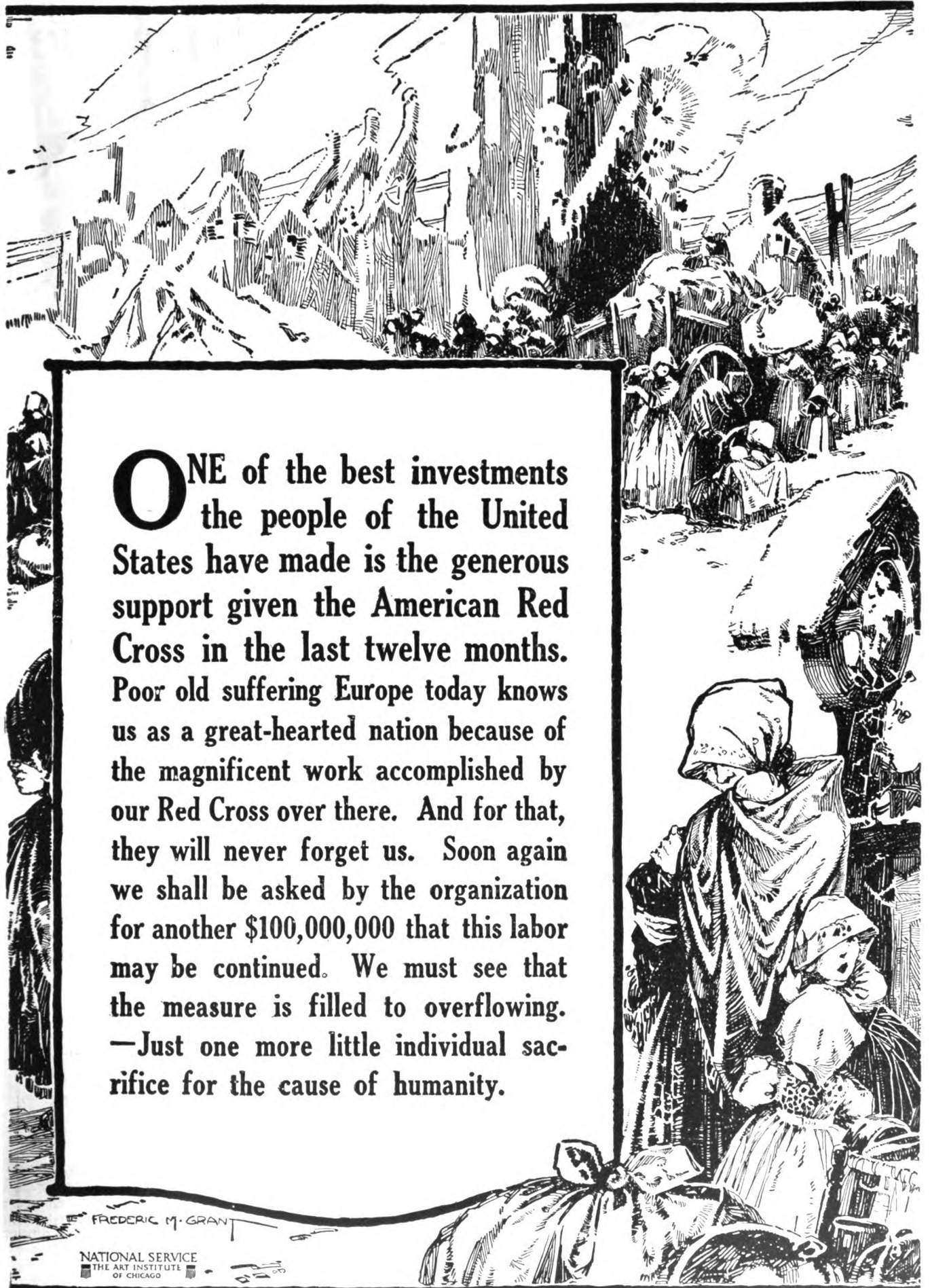
Experience in Europe has proved that when women have been needed to take the place of the men called to the colors, they have adapted themselves to totally unaccustomed tasks.

About the last thing one would suppose a woman could fit herself for is the operation of a heavy motor truck and road-building machinery. But it occurred to a member of the National League for Women's Service and the White company to demonstrate that such work was not beyond the realm of possibility.

Incidents forming a basis for the demonstration were suggested by the experience of a contractor who, shortly after securing a contract for road construction, was drafted. His experience and his wife's timely aid gave the idea for a moving picture scenario, which the League will screen throughout the country as an example of what American women can do to aid their



G. M. C. truck with a heavy load of baled hay and a patriotic young American on the right front fender.



ONE of the best investments the people of the United States have made is the generous support given the American Red Cross in the last twelve months. Poor old suffering Europe today knows us as a great-hearted nation because of the magnificent work accomplished by our Red Cross over there. And for that, they will never forget us. Soon again we shall be asked by the organization for another \$100,000,000 that this labor may be continued. We must see that the measure is filled to overflowing. —Just one more little individual sacrifice for the cause of humanity.

FREDERIC M. GRAN

NATIONAL SERVICE
THE ART INSTITUTE
OF CHICAGO

Accessories and Garage Equipment

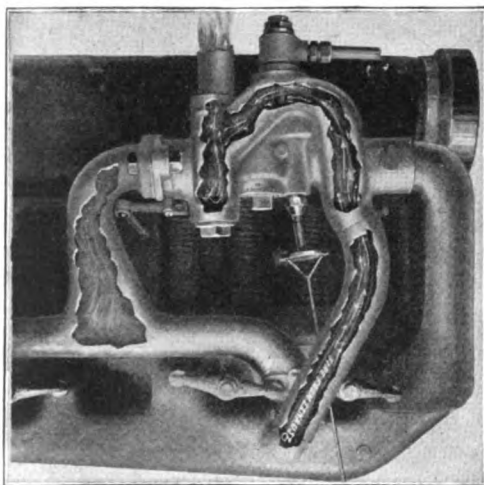
PASCO WIRE WHEELS WIN FRIENDS IN THE WEST.

Pasco wire wheels are proving very popular in the western part of the country. H. E. Van Horn, sales manager of the National Wire Wheel Works, Geneva, N. Y., says:

"The Bailey-Drake Co., who are representing us on the Pacific Coast, have been doing some mighty fine work. We have made several car load shipments into the west and have arranged with some of the most reliable concerns to handle our goods, a few of them being: G. Sommers & Co., St. Paul; U. S. Rubber Co., Des Moines, Ia.; Master Sales Co., Omaha, Nebr.; Spencer-Carroll Co., Waco, Tex.; Electric Appliance Co., Dallas, Tex., and San Francisco; the Chanslor-Lyon Co., San Francisco, Calif., and several other large concerns."

NEW GILSON-FIRESTONE CARBURETOR USES CHEAP FUEL.

The Firestone Sales Co. of 1806 Michigan avenue, Chicago, is putting out a new kerosene burning carburetor that possesses great possibilities. The Gilson-Firestone Carburetor burns either kerosene, gasolene or distillate. It is made of copper in order to hold and maintain the heat to the best advantage. It is especially adapted to the motors of Fords, Maxwells, Chevrolets, Grants and Saxons.



Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....

.....

.....

Name

Address

The motor is started in the usual way by pulling the choke to insure easy starting. Only one adjustment is necessary, the fuel adjustment which is used on all Ford cars. There are only two moving parts to the Gilson-Firestone carburetor, which are of simple construction.

The fire chamber and fuel tube produce a dry gas from low grade fuel which enters the combustion chamber in a dry and explosive form, producing more power, speed and mileage. With this carburetor it is impossible for the gas to enter the chamber in wet or semi-vaporized condition which wastes fuel and fouls the spark plug. The Gilson-Firestone Carburetor is reported to have afforded thirty-one miles per gallon of gasolene consumed.

PANVAR RESTORES BRIGHTNESS TO PAINTED SURFACES OF CARS.

"Panvar" is intended for restoring the bright and lustrous look to cars where the finish has become dull, worn-looking or weather-beaten. With "Panvar" they can be refinished to appear again as spick-and-span as the day they left the factory, but it is not intended for cars where the paint, or original body coat, has been so badly damaged as to require a re-painting job. Only a small expenditure and little time is required to do the job, and there is no delay in the use of the car.

The liquid is so light that most anybody can apply it, without any previous experience in handling a brush. A soft, wide, long-haired brush must be used, from which "Panvar" will flow freely and then level itself out, which permits of doing the job very rapidly. Before applying the liquid all traces of soap, grease, and especially wax polishes, must be completely washed off with gasolene.

"Panvar" is economical to use because of its great covering powers and little cost. A quart, retailing at \$1.50, will do an ordinary car complete—tops, seats, and all—one coat. On much worn cars two coats may be necessary. Besides being easy to apply and quickly drying, "Panvar" has virtues unlike varnish in that it will not crack, craze, peel, or turn white from the use of water or from steam. The finish is enduring—it will last from four to six months—about as long as the best varnishing job costing from \$50 to \$100.

Garage men, dealers in new or rebuilt cars, accessory dealers and jobbers should get in touch with the Panvar Co. Bulletin Building, Philadelphia, Pa., which will mail a small sample to all interested parties, with instructions how to apply and full information as to terms, discounts, etc.

Motor tradesmen who have the proper facilities and room can make large profits by doing "Panvar" jobs for their customers. Every car owner likes to have his car look new and is a prospect. A car does not have to be tied up as "Panvar" dries hard over night.

TORIT LEAD BURNER CAN BE USED FOR LIGHT WELDING.

Several important features are claimed for the Torit lead burning outfit. One special advantage of this outfit over the hydrogen apparatus for lead burning is that with the Torit, which uses oxygen and acetylene, repair men in battery stations or garages are not forced to buy expensive hydrogen tanks, as the small Presto tanks that are to be found in all garages can be used with it.



Another money making and convenient advantage of the Torit outfit is that all kinds of light welding and brazing jobs may be done with it. So while the garage owners or battery station man is installing a lead burning outfit he is at the same time obtaining an effective apparatus with which to do small welding jobs.

The Torit outfit has become increasingly popular in smaller cities and towns, as garage owners and car and accessory dealers in many of these places are going into the battery repair business. The outfit is marketed by the St. Paul Welding & Mfg. Co., St. Paul, Minn.

DRY FUEL USED IN NEW ADAMSON VULCANIZER.

An entirely new and improved feature in portable vulcanizers is the use of powdered dry fuel in the Adamson model "E" outfit for repairing tube punctures. A measuring cup of this powdered fuel is poured into the receptacle and when ignited, it burns with a hot glow, and without flame, vulcanizing the patch permanently.



The outfit includes vulcanizer, can of Adamson dry fuel, box of 12 patches, measuring cup, sandpaper and directions. Sells complete for \$1.00; extra box of 12 patches, 25c; extra can of dry fuel, 50c. It is made by the Adamson Mfg. Co., East Palestine, Ohio.

AMERICAN PISTON RINGS MADE TO BE LEAK-TIGHT.

It is claimed for American hammered piston rings that they are absolutely leak-tight. These rings are of one piece, and concentric in shape, being of the same thickness all around. They obtain their tension through the patent hammering process and it is claimed that this tension is permanent be-

**75% CURTAILMENT
OF AUTO MAKING
PLANNED BY U. S.**

From
Chicago
Tribune

Washington, D. C., May 3.—Every ton of steel and pig iron in the country virtually has been commandeered by the government for war purposes, and any surplus remaining after war needs are met will be distributed to nonwar industries under strict government supervision.

The passenger automobile industry, one of the largest consumers of steel of the so-called less-essential industries, will be among the first to feel the effect of the new policy. Representatives of 75 per cent of automobile manufacturers of the United States are to meet next Monday a government committee.

These officials will announce that the government's and allies' steel requirements will necessitate a 75 per cent curtailment of the passenger automobile industry or possibly a greater restriction.

Other less essential industries, however, will be affected.

**ADELITE
MOTOR
CARBON
REMOVER**

Sell Ad-El-Ite Motor Carbon Remover to Save Cars

WITH automobile production cut perhaps 75%, cars now in use must be *conserved*. Every automobile owner must get the utmost from his present car and prolong its life. Ruinous carbon cannot be tolerated. Now is the time to push Ad-El-Ite Motor Carbon Remover—not only for the profit you make but because you will perform a valuable national service in showing your customers how they can make their cars last longer.

Ad-El-Ite Motor Carbon Remover keeps motors like new. Increases power and speed. Saves 12½% to 25% gas and oil. No lay-up. Harmless to metals.

Write today for prices and discounts. Send 25c for helpful book "Auto Troubles Cured." Free with a purchase of any of our full line of Ad-El-Ite, Auto Paint and Varnish Specialties.

SPECIAL

Enough Ad-El-Ite Motor Carbon Remover to thoroughly clean two or more cars will be sent prepaid anywhere in the U. S. for \$1.25.

DEPT. A-5

ADAMS & ELTING CO.

716-726 Washington Blvd., Chicago
69-73 Washington Ave., Brooklyn

Do Tire Repairing

WITH THE SAME EQUIPMENT AS USED BY
ALL LEADING TIRE COMPANIES

RIGHT NOW—

HIGH tire prices and the nation-wide need for thrift is **doubling** the amount of tire and tube repairing. And the increasing shortage of men to do the work has opened up splendid opportunities for men of all ages, and all former occupations, to establish themselves in this money-making business.

With millions of cars in use and millions coming—all wearing down tires every day—no other field offers such big profits and sure opportunities—provided you start with the **right** training and the **most approved** repair outfit.

Akron-Williams

TIRE REPAIR EQUIPMENT

Designed and Perfected by Leading Tire Engineers, Used and Sold by Over 100 Tire Companies

Not Much Capital Required

With an Akron-Williams outfit, you can start now in a small way, or as a department of a store or a garage, at light expense; and add equipment as your business grows. Little money will buy a complete outfit that will do ordinary casing and tube repairs.

An Outfit for Every Size Shop

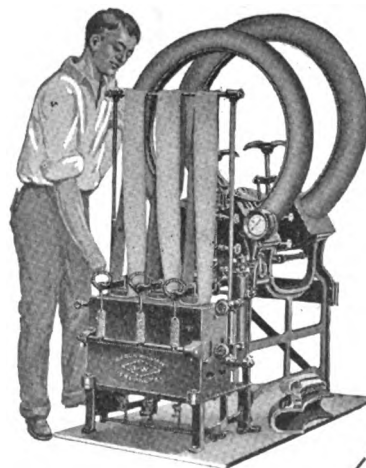
The Akron-Williams line is the largest and most complete. Outfits of every size, and a machine or tool for every purpose. No equipment is too large for us—no tools are too small.

Learn Under the Best Experts Get Choice of Best Locations

For buyers of Akron-Williams outfits we arrange thorough and practical training in all branches of tire and tube repairing, under the personal direction of **experts in the big tire factories.**

Furthermore, we are constantly in touch with the best openings available all over the country and we help buyers of our equipment to locate where opportunities are Best.

Write, or Fill in the Coupon—TODAY



**The Williams
Foundry & Machine Company**
River Street
Akron, Ohio

Exclusive distributors for California:

**THE WATERHOUSE &
LESTER COMPANY**
San Francisco,
Oakland and
Los Angeles

**The Williams
Foundry & Machine Co.**
River Street
Akron, Ohio

You may send me catalog, prices and full information regarding your tire repair equipment.

Name

Street

City & State

**AKRON-WILLIAMS
A-W
PRODUCTS**

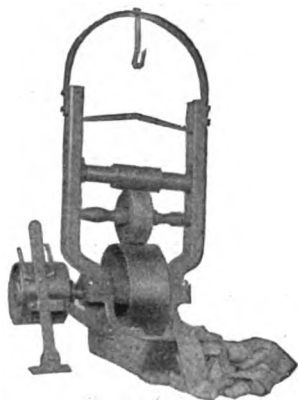
Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

cause of the compressed metal on the inside. The ring cannot lose its tension no matter how hot the ring becomes.

Henry S. Pruyn, Jr., who distributes these rings in Chicago, says that they exert a uniform pressure at all points of the ring. He says that this keeps the cylinder round and consequently they do not need re-boring so frequently. The American rings are guaranteed not to wear the cylinder walls, the metal in each American ring being hard enough not to wear rapidly, but not so hard as to wear the cylinder walls. They are made in all sizes to fit all motors, and further information and particulars can be obtained from the Pruyn Ball Bearing Works, 1919 S. Michigan avenue, Chicago.

AKRON-WILLIAMS RAG ROLLER SAVES TIME.

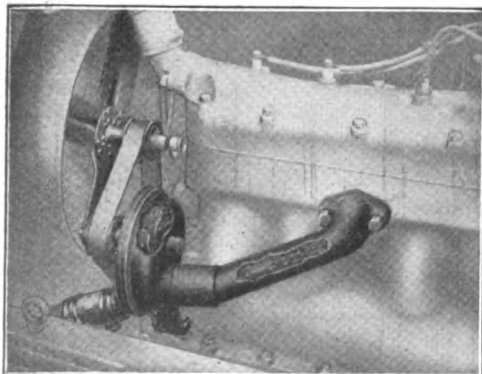
The new time-saving device meets the demand from tire factories and large repair shops for greater accuracy and speed in unwinding the wrappings around inner tubes after curing. The mandrel and tube are placed before the rag roller, loose end of rag in contact with roller, then power is applied and the rag quickly rolled off mandrel and on to roller. The rag may be removed with ease after lifting small rod up to hook at the top.



This new Akron-Williams rag roller takes up very little space, and may be installed on a bench or at any convenient place near the machine for wrapping tubes. The price is less than old style rag rollers and it is being adopted by many shops in recognition of its time and money-saving efficiency. It is made by the Williams Foundry & Machine Co., Akron, Ohio.

FIRESTONE CIRCULATOR KEEPS FORD MOTORS COOL.

Firestone Ford circulator is said to be the first centrifugal water circulator produced. This device is made for Fords and is adaptable to passenger cars, trucks and tractors. The maker guarantees this circulator to keep



the Ford motor so cool that you can lay your hand on the radiator after it has been running idle several hours. It saves oil consumption, as a cool motor requires less oil. It also minimizes the carbon troubles which are caused by excessive heat in the firing chamber.

Dealers may obtain full information and trade propositions from the Firestone Sales Co., 1806 S. Michigan avenue, Chicago.

UNIVERSAL BATTERY CLIPS SAVE TIME IN CHARGING.

Universal battery clips are proving a great convenience to battery service station operators, as they enable the charging of lighting and starting batteries without disconnecting them from the cars. All that is necessary is to fit the connecting cords with Universal battery clips and snap them over the terminals. It is not even necessary to stop to clean dirty terminals, as the teeth bite through the corrosion and make a good contact.

When it is desired to charge batteries in series it is only necessary to provide a number of pieces of flexible cord or cable of suitable sizes and lengths and equip them with clips at each end. Full particulars as to prices can be obtained from the manufacturers, R. S. Mueller & Co., 417 High avenue, Cleveland, Ohio.

TWO WAY LUBRICATING SYSTEM GIVES GOOD SERVICE.

Owners of garages and fuel and oil supply stations are reporting that they have very satisfactory service from the two way lubricating system produced by the Milwaukee Tank Works. This outfit provides a system for drawing lubricating oil on the inside of the garage and at the curb, both from the same supply. It also does away with the necessity of having the tank buried under ground.

The curb pump draws its supply through the pipe which runs beneath the sidewalk

The tank containing the supply of lubricating oil can be placed as far away from the pump on the curb as desired. It is only necessary to have both on approximately the same level. The inside pump is self-measuring with adjustable stops for quarts, pints and half pints. It has a non-dripping faucet and lock and key. It is made by the Milwaukee Tank Works, Milwaukee, Wis.

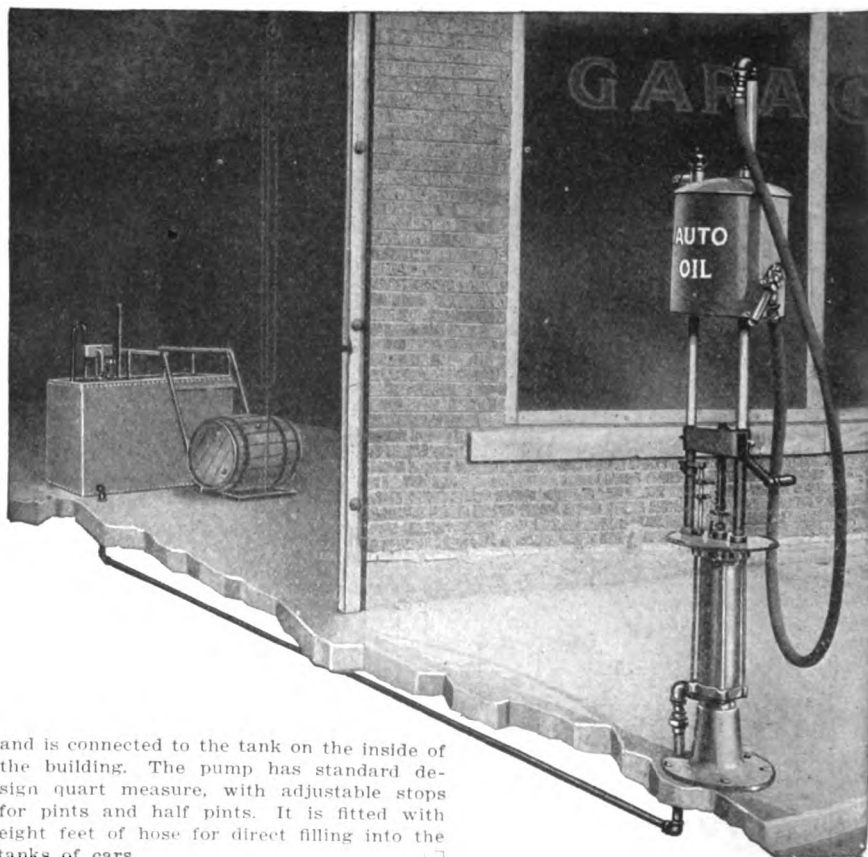
"SIMPLE SYSTEM" OUTFITS FOR REFINISHING CARS.

To meet the unusual demand this season for refinishing materials, the F. O. Pierce Co., 12 West Broadway, New York City, has introduced the "Simple System" outfit. It is designed for the car owner who wishes to refinish his car in an economical yet lasting way. The outfit is not a polish to bring out the luster of the old paint, but is a series of paints as originally applied, yet much simplified.



The "Simple System" outfit is composed of three containers of: 1st, auto preservative undercoat; 2nd, auto preservative color, and 3rd, auto preservative varnish. Brushes for applying the paint are a part of the outfit.

The manufacturers declare that with the "Simple System" outfit an amateur can repaint his own car by following directions furnished, as each coat is so compounded that it will flow smoothly and dry overnight.



and is connected to the tank on the inside of the building. The pump has standard design quart measure, with adjustable stops for pints and half pints. It is fitted with eight feet of hose for direct filling into the tanks of cars.

Removing



Showing Lawco being used on Kelsey Rim. Tool placed inside. Lifting on lever expands rim sufficiently to unlatch dovetailed lock. Used in same manner on Detroit rim.

Just One Minute

To Remove Tire From Rim With

THE

LAWCO RIM TOOL

Just three simple movements—breaking, contracting, and latching—and your

tire is free from any demountable transversely split rim in *less than a minute*.

The Lawco Rim Tool gives results quick as a monkey wrench. Its claws are hooked over the rim and contracted by a simple motion of the lever. The lever locks the tool automatically and holds the contraction. This leaves both hands free to remove tire. Having been repaired, tire can be put back on while the rim is still in the grip of the tool.

To latch rim at the split, tool is placed inside rim. It will fit inside because one arm has a self-adjusting claw capable of shortening the radius of the arm. A reverse movement of the lever expands the tool and rim as much as is necessary to permit latching of the ends.

Price, \$3.50

Lawco Crown Fenders

make Ford Pleasure and Commercial cars look like higher priced automobiles and prevent rattling.

Lawco Silencer

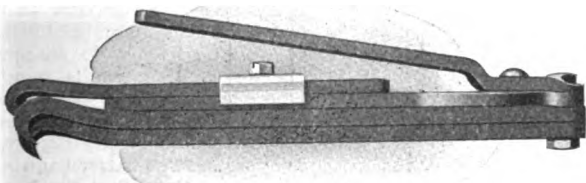
eliminates back pressure and loss of power. For any car.

Write for Circular

Get the LAWCO Rim Tool from your Dealer.

If he can't supply you, write us.

THE F. H. LAWSON CO., Dept. A, Cincinnati, Ohio



Closes like a jack knife to go in tool box



Replacing

Effect produced by hooking adjustable claw on the side opposite from the other two claws. Causes rim to contract in a helical form without either end in any way disturbing the valve stem. This also makes it very easy to slip rim out and in.

GARAGE MEN AND AUTOMOBILE DEALERS —

Stop That Money Leakage!

Mr. Garage Owner and Automobile Dealer you should KNOW how you stand Financially!

Are there Leaks in your book-keeping system?

WE GUARANTEE YOU THE UTMOST EFFICIENCY WITH OUR SPECIAL GARAGE BOOK-KEEPING PLAN

A COMPLETE CUSTOMER'S RECORD SYSTEM FOR GARAGE OWNERS AND AUTOMOBILE DEALERS.

The Harton System is being used by Garage Owners & Automobile Dealers everywhere — Mistakes are impossible and carelessness a thing of the past.

The Perfect Labor Saving Device

This Page is the Customer's Bill, the one underneath is your copy

A FEW REASONS WHY

- 1—When you make an entry, a bill and charge are made at the same time.
- 2—Simplified method of recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.
- 5—Statements ready at end of month for immediate mailing.

Send for Descriptive Folder Today—Use Coupon

Thos. J. Harton & Co. Inc.

LOOSE LEAF SPECIALISTS.

212 X Church St. NEW YORK.

Other HARTON Time and Money Savers.

Accounting Record System.
Stock Record.
Repairing Outfit Forms.
Purchase Order System.
Workman's Time Tickets.
Repair Tickets.

Send Us the Coupon Today and We Will Mail Full Particulars Free.

Thos. J. Harton & Co. Inc.
212 X Church St., New York.

Send me FREE Descriptive Folder.

Name _____ Address _____

Of particular interest to the dealers, the "Simple System" outfit is put up in neat, compact and attractive containers which will serve to make conspicuous and timely window displays and conserve shelf room in the store.

"AKKURATE" SYSTEM DOES NOT NEED BOOKKEEPERS

The "Akkurate" self-indexing ledger and statement system adapted for garages and automobile supply dealers turns the light on bookkeeping systems, according to the Accurate System & Manfolding Co., 22 Elm St., New York. It is declared that this cuts the red tape and that it can be used by clerks or others not specially trained in bookkeeping.

Only one entry of the account is necessary instead of three or four, as in ordinary bookkeeping. One entry is made of the account from sales slips and one final entry at the end of the month. When the last sale for the month is posted the statements are ready to be sent out. One book serves as order book, day book, ledger and statement pad. The company is offering this system to garage men and dealers to try out at no cost to them, and will be glad to furnish further information.

NORWESCO BOOKLET ON PROPER CARE OF CARS.

Quite in line with the Nation's plan of conserving and preserving is the attractive twenty-four page booklet, "The Proper Care of Your Car," published by the Northwestern Chemical Co., of Marietta, Ohio, manufacturers of the "Chemically Correct" line of Norwesco utilities. It is distributed to motorists by car and accessory dealers and garagemen.



This booklet is full of practical hints for the motorist. It tells how to overcome and to correct some of the different ills a motor car is subject to. Unlike some booklets, it gives more than one remedy for correcting the most common troubles. In fact, it tells just what its name implies: "The Proper Care of Your Car."

It is well illustrated and any motorist will find it serviceable and helpful. The tradesmen readers of the American Garage & Auto Dealer can obtain copies for their customers by writing the Northwestern Chemical Co., Marietta, Ohio.

PRAISE FOR DEFENDER AUTO LOCK

In a recent issue, the National Underwriter commended the Defender auto lock, made by the Defender Auto-Lock Co., Marquette Bldg., Detroit. The article was in part as follows:

"For many reasons Ford cars, among all the various makes of machines, have been the greatest source of worry to automobile theft underwriters. They are so easily taken and so numerous and so easily disposed of, that they have really been a favorite prey

for joyriders, occasional thieves and professional thieves.

"The situation grew so bad that many companies discontinued writing theft insurance for Ford owners in some of the larger cities some time ago and even with the increased rate on this class, are declining them unless equipped with a lock approved by the Underwriters' Laboratories.

"Among these locking devices, is one that seems to fill the bill in every manner—The Defender Auto Lock. It protects the car satisfactorily, costs but a small amount, has made a fine record on tests in the laboratories and in the field and can be installed by any owner of a car. Its original cost is low, so that the saving given to insurance buyers for the installation of the lock, reduced the net cost in many instances to a ridiculous sum on the very first year's insurance. The saving over the period of life of a Ford car will more than pay for the cost of the lock.

"The Defender locks the coil box in such a manner that it cannot be tampered with and at the same time it does not change equipment or wiring in any way. It is indestructible, cannot be broken with a hammer, is equipped with an intercepting switch blade that guarantees against starting the motor in any manner while the key is removed from the lock. It is positively pick-proof. Its construction is such that more than a million combinations are possible. It will stand unlimited wear and severe abuse. It is fine in appearance and would not be at all out of place on a luxurious vehicle."

SHALER VULCANIZER HAS EXCLUSIVE FEATURES.

One of the biggest selling features of the 1918 model Shaler 5-minute vulcanizer is its ability to make both round and oblong patches—an exclusive feature. The one-piece patch and heat unit consists of solid fuel, vulcanizing plate and patch of raw rubber, the latter containing no fabric to prevent it from stretching with the tube. There is a fresh clean vulcanizing surface for each repair. The rubber and fuel are protected against deterioration while in the dealer's stock or in the tool box of a car. Six each of the oblong and round patch units come with each outfit.



The Shaler 5-minute vulcanizer is substantially made of iron, finished with a coat of rust-proof nickel. The outfit, consisting of vulcanizer and six each of the round and oblong patch and heat units, retails for \$1.50. Extra patch units, either round or oblong, sell for 75 cents per dozen.

Last year the Shaler 5-minute vulcanizer was one of the biggest selling accessories. This year, with the new feature of making both round and oblong repairs, the sales are showing a huge increase. C. A. Shaler Com-

pany, Waupun, Wis., the manufacturers, are making prompt deliveries and are prepared with their own printing department to supply dealers who carry the Shaler line with ample quantities of advertising matter.

H-B BELTED CHARGER

This ideal capacity battery charging outfit for service station and garages that do not have electric current, or use gas engine power, is manufactured by Hobart Brothers Company, Troy, Ohio.

The H-B belted charger will charge seven 6-volt batteries or their equivalent at one time. It operated from line shaft or engine, requiring 1 actual horsepower to operate. Switchboard is furnished complete ready for use with ammeter, pilot light, field rheostat and circuit breaker and necessary fuses and cutouts.

This charger is sold on easy payments, which enable the garage man to buy a dependable ample capacity battery charger with the profits from each month's business. Write for further details and price.

TWO TYPES OF ADAMSON BRAKE SHOES FOR FORD CARS.

The Adamson brake shoes for Ford cars are produced in two types, one type being unlined, and the other lined with asbestos having wire insertion, and riveted to shoe.



The faces of these shoes which are in contact with the cam are specially hardened, preventing them from wearing down out of true and adding materially to the shoe's life. Made by Adamson Manufacturing Co., East Palestine, Ohio.

INSTRUMENT BOARD IS PART OF ASKE DUAL LIGHTING SYSTEM.

A complete instrument board is supplied as part of the equipment for the Aske dual lighting system. The instrument board is made of selected wood finished in black enamel, coming complete with flush type clock, dimmer and push and pull switches, wired ready for installation. There is also a rear lamp adapter for converting an oil lamp into an electric one. With this on a Ford the headlights can be instantly dimmed when necessary and the rear lamp electrically lighted. By turning the ignition switch to the battery side of the coil box the engine can be started without vigorous cranking.

When the Aske voltage regulator is used with the dual lighting system bright lights are obtained at all speeds. No change of the wiring of the dual system is required. With the Aske dual system a Ford owner is never without a light and batteries last a long time, since they are mostly used when the engine is stopped. The battery and magneto switch is designed so that the battery and magneto can not be used at the same time for lighting purposes, which is assurance against trouble.

Announcing— **AMERICAN 5-GALLON DOUBLE ACTING CURB PUMP**

This new American pump is designed for filling stations and garages which demand "up-to-the-minute" equipment.

Some of the features which make this pump indispensable are:—

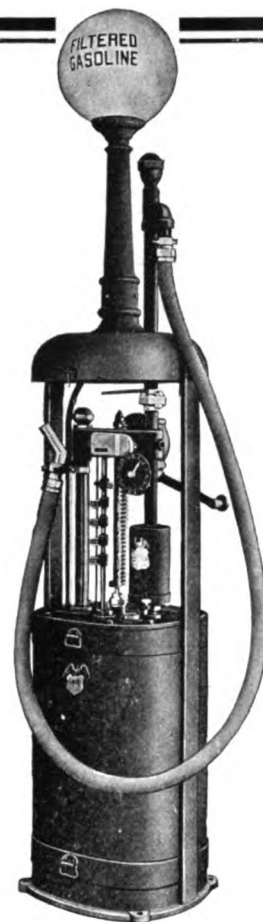
- 5 gallons every 11 turns of the handle,
- Double-acting, continuous flow,
- Pumps 30 gallons per minute,
- Accessible valves,
- Accurate measurement,
- Largest, heaviest, handsomest pump of this type ever designed.

This pump possesses the same high quality of materials and workmanship that characterizes all American Pumps.

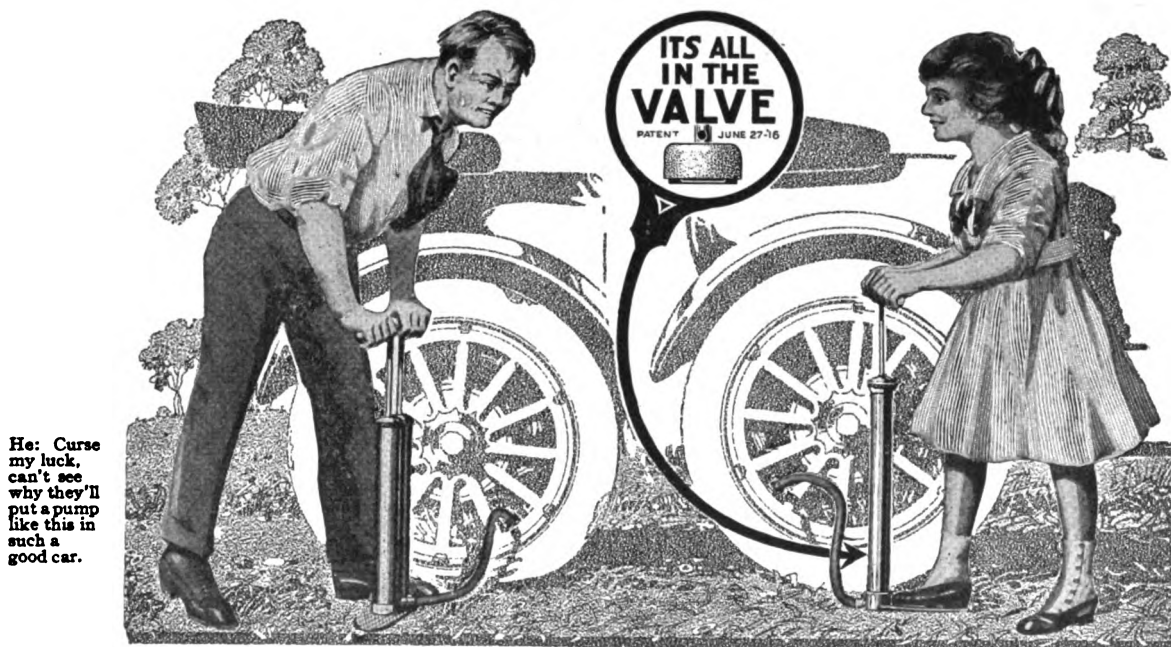
Write for bulletins giving complete information, prices, etc.

Salesmen wanted—good territory open.

The American Oil Pump & Tank Co.
CINCINNATI, OHIO



DID IT EVER OCCUR TO YOU?



He: Curse my luck, can't see why they'll put a pump like this in such a good car.

She: Gee, I'm glad Dad bought this ROSE PUMP or I'd sure be stalled.

JOBBER! DEALER! USER! More ROSE PUMPS actually purchased by dissatisfied users of out-of-date pumps last year than any other pump in existence. **There Is a Reason. Find Out Yourself. Write for a Sample.**

J. H. HANEY & COMPANY

HASTINGS, NEBRASKA

Manufacturers Rose Pumps, Grease Guns and Fan Belts

An
Electric
Sign



Will
Keep You
Busy

Mr. Garage Owner, They Can't Lose You, If—

you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

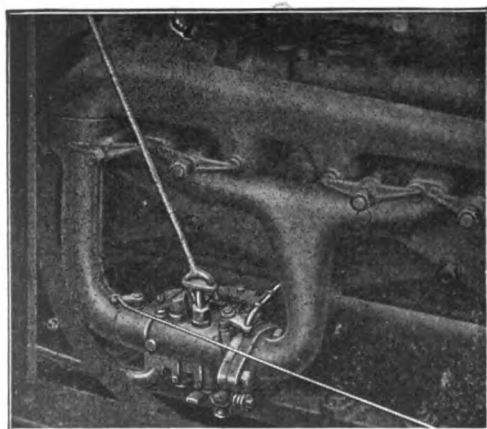
Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

COMMONWEALTH EDISON COMPANY

Edison Building, 72 West Adams Street, CHICAGO

*If located outside Chicago address: Federal Sign System (Electric)
Lake and Desplaines Streets, Chicago*

Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retails for \$8.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.

"—and Give Me Another Can of That Body Polish"

So says the motorist as he stops at your place for gasoline. Maybe it's a tire or a bit of repairing that he wants—whatever it is you get the business. You get more business because your Milwaukee Gasoline Pump standing out in front of your place brings more motorists to you. They appreciate the speed and accuracy with which you are able to serve them. Motorists who formerly whizzed by your place will become your steady customers.

Our many years of experience supplying the demands of thousands upon thousands of gasoline retailers enables us to make the kind of outfits that sell not only gasoline but all of the supplies that a garageman handles as well.

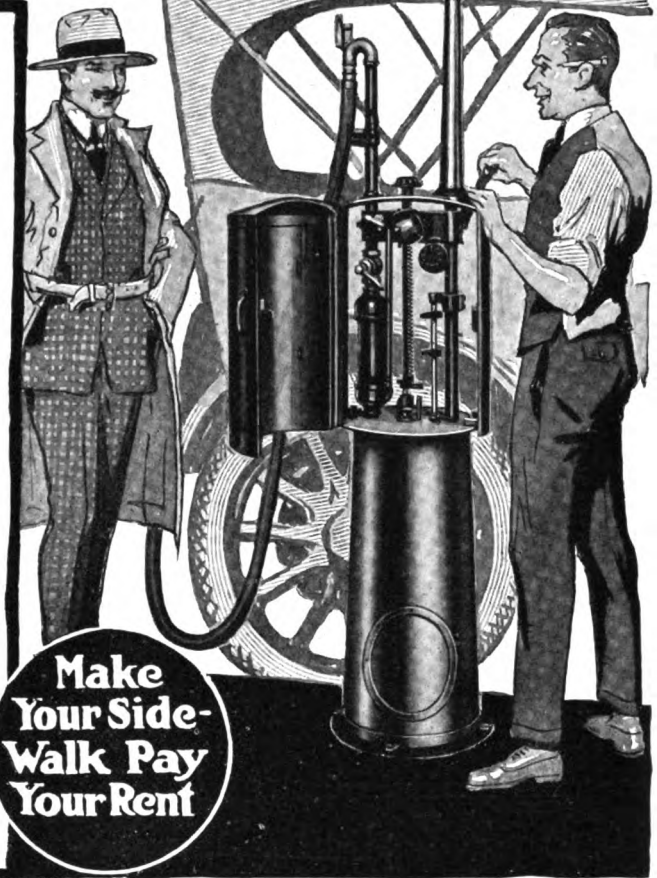
We manufacture a line of thirty different outfits for the storage and handling of gasoline and oil, including the famous "Master Electric" gasoline pump. Send for our complete catalog.

Milwaukee Tank Works

MILWAUKEE, WISCONSIN

Our well-stocked warehouses in North, South, East and West assure prompt shipments — anywhere.

Make
Your Side-
Walk Pay
Your Rent



When you want MEN

Possibly you want a shop mechanic or a man who is experienced in your business. For the shop, salesroom or office you can locate **that man** by a classified ad in this paper.

If you have parts or equipment you wish to sell, you can dispose of it to the best advantage by the same medium.

Classified rates on request.

**AMERICAN GARAGE
& AUTO DEALER**

116 So. Michigan Ave., Chicago, Ill.

AMPECO PRODUCTS

Sell readily because their superiority
is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

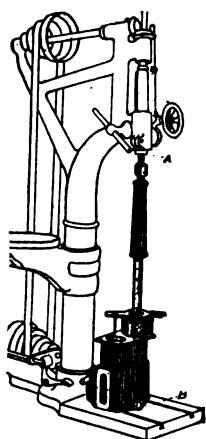
MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece. If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

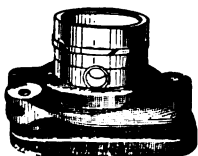
General Selling Agent for

**American
Machine
Products
Co.**

Marshall-
town,
Iowa



The Storm Piston Vise
designed for the repair shop,
holds the piston firmly while
fitting rings, bushings, con-
necting rod, etc., without
loss of time or injury to the
various parts.



STORM MOTOR REPAIR EQUIPMENT

is making big profits for
hundreds of automobile
shops. The **STORM Cylinder
Reboring Machine** is the
most practical machine for
any type of motor. SIMPLE.
SPEEDY, ACCURATE and
RELIABLE for hand or
power. No shop complete
without one. In daily use in all
parts of U. S. A. and foreign
countries.

Shortage of new cars makes it
indispensable in large and small
shops.

We furnish machines of varied
capacities. Also special machine
for Ford and Dodge.

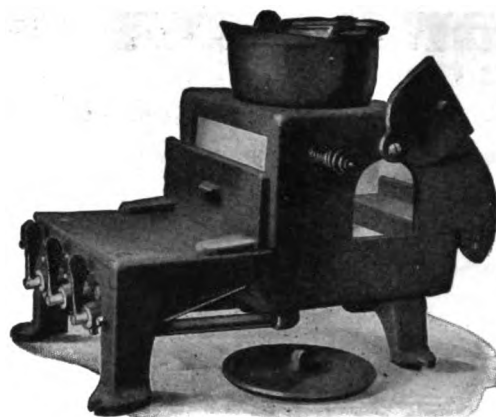


The Storm Connecting Rod Gauge
accurately straightens and aligns Ford
connecting rods, overcoming many cyl-
inder and bearing troubles and insuring
a smooth running motor.

WRITE FOR LITERATURE

STORM MFG. Co.
THOMPSON, IOWA, U.S.A.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



can be used for bending
and straightening axles —

or for many other important jobs. Will not only
successfully heat-treat many carbon steel tools, but
will also melt 20 pounds of soft metal at a time, or
heat soldering irons up to 14 pounds to the pair.

JOHNSON*118 BENCH FURNACE

ready for instant use by connecting
the furnace to a gas supply pipe.

1800 degrees F. is obtained in the fire box without
a forced air blast, by simply using ordinary city
or natural gas.

Just the furnace for garages and repair shops

THE JOHNSON GAS APPLIANCE CO
CEDAR RAPIDS...IOWA



Smooth as the flight
of the birds



going North for the Sum-
mer is the progress of the
Ford equipped with

W. & C.
Shock Absorbers

The 100,000 Fords equipped with these Shock Ab-
sorbers is adequate proof of their superiority. There
will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for
W. & C. Shock Absorbers. The expenditure of \$10.00 adds
many times that amount to the life of the car, to say noth-
ing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air.**

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.



MIDLOTHIAN TEXAS.



MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

Monogram Users are Quality Choosers.

NEW YORK LUBRICATING OIL CO.

NEW YORK CITY and CHICAGO

Branches in Principal Cities



No wasted "Free Air"

SNAP! When the inflating valve is removed the **AIR PRESSURE STOPS**

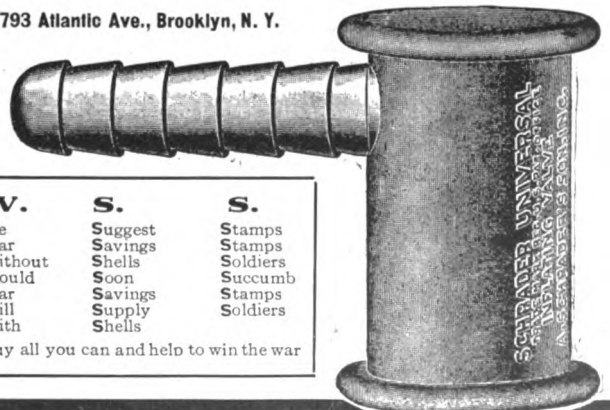
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from 1/4 to 3/4 inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.

We
War
Without
Would
War
Will
With

S.

Suggest
Savings
Shells
Soon
Savings
Supply
Shells

S.

Stamps
Stamps
Soldiers
Succumb
Stamps
Soldiers

Buy all you can and help to win the war

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

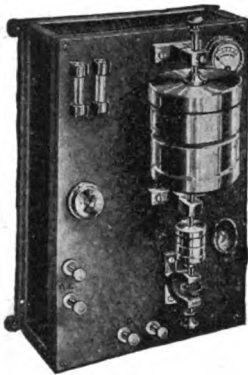
The *Breco* Converter FOR

charging batteries or for any other purpose where it is necessary to change A. C. to D. C. is **Far Superior.**

**HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE**

The new, modern method tested by years of everyday service. Endorsed by highest authorities.

Price, \$24.00 Up---Sizes, 1 Battery Up



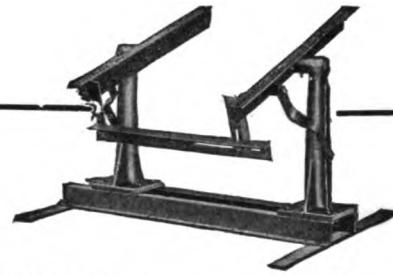
Battery charging becomes a very simple, inexpensive and mighty profitable matter with the BRECOCHARGER.

Write for Catalog No. 22

**THE
BRECO ELECTRIC CO.**

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crare—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

Difficult Soldering Jobs in the garage are made easy by

NOKORODE

This soldering flux is used by the automobile industry almost exclusively. Wherever efficient soldering is difficult—or a matter of prime importance—NOKORODE is invaluable. For delicate jobs or for soldering in those inaccessible places, it is just the thing.

Every garage and repair shop should have a supply.

Write today for testing sample.

The
M. W. Dunton Co.
Providence, R. I., U. S. A.



Any barrel is now a portable Self-Measuring Tank with the BOE Automatic OIL PUMP



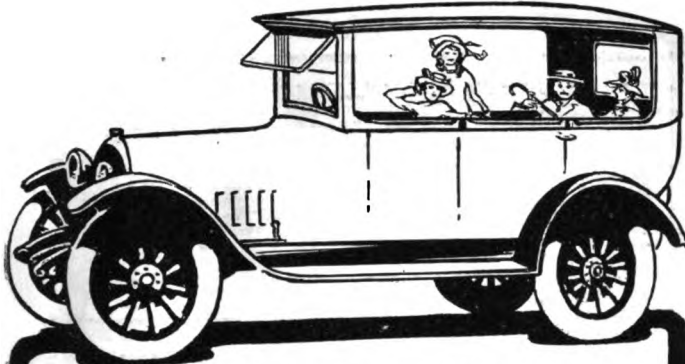
No funnels. No waste. Only clean oil cleanly delivered. Fits any style 25 to 60 gallon steel or wood barrel. Measuring graduated to $\frac{1}{4}$ pint. Will pass state inspection.

Literature and prices on request.

H. M. BOE CO.

2416 University Ave., S. E.
MINNEAPOLIS, MINN.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



YOUR CUSTOMERS will want this pump!

You have heard the old maxim, "The proof of the pudding is in the eating."

The Jensen Auto Tire Pump has maintained a standard for the past four years and is **proof** and has **proven** its wonderful merits time and time again.

JENSEN TIRE PUMP

Ninety pounds pressure with one-fourth the effort of the ordinary hand pump.

Sounds mighty good—don't it?

W.H.HOWELL CO.
Geneva, Ill. U.S.A.



Purchase one and get the **proof**.

Write for jobbers' and dealers' discounts.

Will pay for itself in less than a month then—profits!

DESIGNED especially for "Lead Burning" or Battery Work but suitable for radiator work and all light welding and brazing jobs—the most convenient tool for the shop. We offer

TORIT

L-B Outfit No. 1, for use with Oxygen and Acetylene.

**Get into the Profitable Business of
Repairing Batteries and Radiators.**

ACT NOW. WRITE US FOR FULL PARTICULARS.

St. Paul Welding & Mfg. Co.
176 W. Third St. St. Paul, Minn.

"Mfrs. of Oxy-Acetylene Equipment"

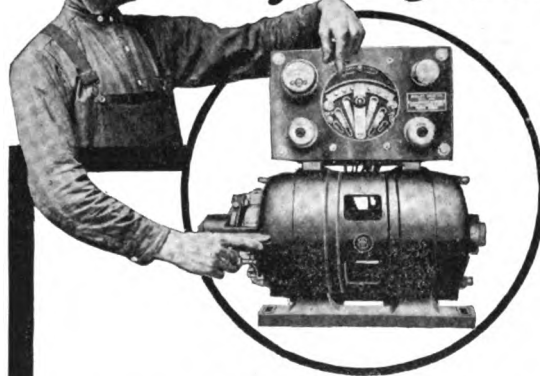
Now
2,000,000
in use



INLAND
1 PIECE PISTON RING

There are **REASONS** why Inlands sell so fast. **GET THEM!**
Inland Machine Works, 817 Mound St., St. Louis, Mo.

Battery Charging Pays Big Profits



The biggest new line of profit in the garage business is recharging storage batteries, and it's growing bigger every day. If you are not already equipped to give this kind of service, it will pay you to investigate it at once.

Reports of Profits With HB Battery Chargers

\$139.50 Profit first month.
\$101.94 Monthly Profit.
\$89.00 Monthly Profit.
\$58.00 Monthly Profit.
\$54.00 Monthly Profit.

Other HB owners report from \$40 to \$60 clear profit every month. You should do as well.

The HB 500 watt Battery Charger, illustrated above, may be operated from city current or engine, without any electrical or mechanical experience. It will recharge 1 to 7 batteries at a time, with a current cost of only 12c to 15c per battery. Autoist pays 75c to \$1.50. Your profit is 60c to \$1.35 on every battery you charge. Figure the profits you can make.

\$15 Puts This Money-Maker in Your Garage
Balance in 9 monthly payments of \$20 each, which earnings should easily more than pay. Tear out this ad and send it with name for full particulars, or send \$15 first payment with trial order. Under absolute money-back guarantee, you run no risk. Write or order today.

Hobart Brothers Company
Box G5. Troy, Ohio

Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.



Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

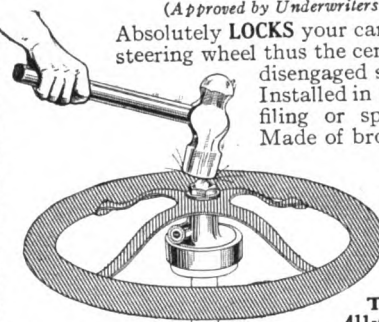
The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely **LOCKS** your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.

DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.



GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

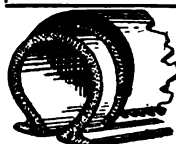
Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel will put them back on the job.**

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the McDaniel plant they

are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the **SPECIAL MCDANIEL DOUBLE TREAD PROCESS.** Your old tires are now made into one good tire ready to give you thousands of miles extra service.

	If You furnish 2	If You furnish 1	If I furnish Both	Special Gray Tubes
SIZE	Casings	Casings	Casings	
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3 1/2	4.00	6.00	7.25	2.40
32x3 1/2	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4 1/2	5.75	9.00	11.50	4.10
35x4 1/2	5.75	9.25	12.00	4.25
36x4 1/2	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

WILLARD SUPER HEATER

A great saving for the car owner.
Big Profits for You

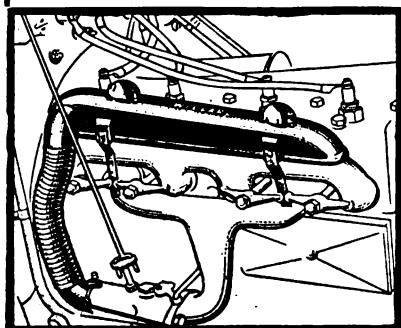
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for **\$15.00.**

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

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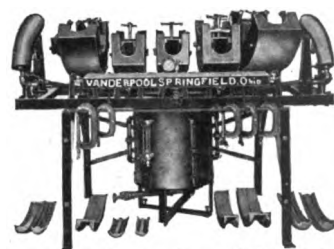
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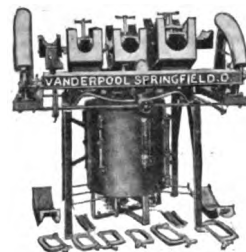


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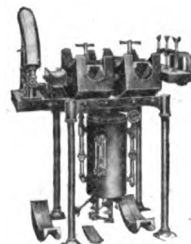
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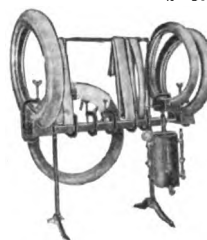
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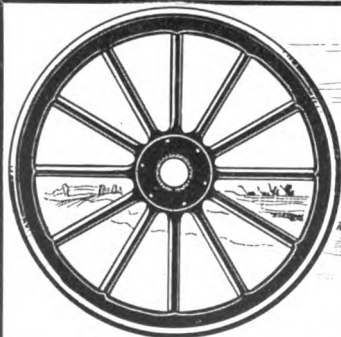
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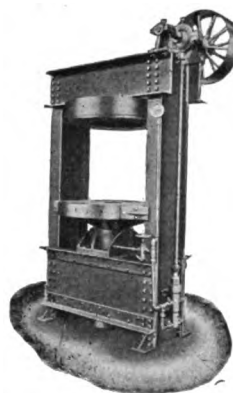
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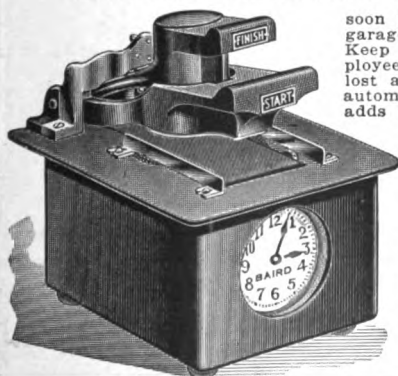
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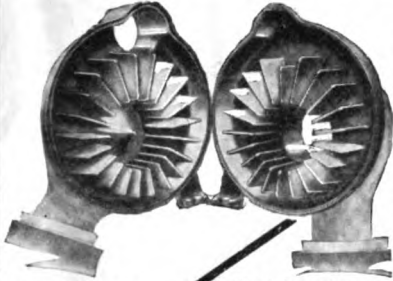
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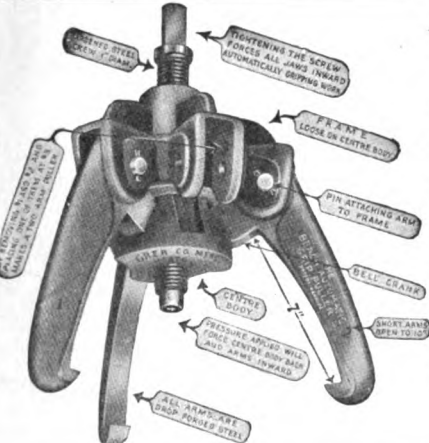
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Index to Advertisements

A	K
Accurate System & Manifold- ing Co. 61	Kennedy Car Liner & Bag Co. 59
Adams & Elting 43	Keys Piston Ring Co. 56
Advance Automobile Accesso- ries Corp. 62	L
American Bolt & Screw Case Co. 57	Lawrence & Co., L. 58
American Machine Products Co. 50	Lawson Co., The F. H. 45
American Oil Pump & Tank Co., The 47	Lourie Mfg. Co. 56
American Technical Society.... —	M
Aske Automatic Voltage Regu- lator Co. —	McDaniel Rubber Co., Leo. 54
Atlas Auto Supply Co. —	Marvel Carburetor Co. 48
Auto Cape Top Co. 58	Marvel Machinery Co. —
Auto Engine Works 58	Martin Rocking Fifth Wheel Co. —
Auto Salvage Co. 58	Master Body Co. —
Auto Spring Repair Co. 59	Miami Trailer Co. 4
Auto Wrecking Co. 58	Milwaukee Tank Works. 49
B	Motor Accessories Corp. 35
Baird Equipment Co. 57	Mueller & Co., R. S. 59
Bearings Service Co. 59	N
Bermo Co., A. J. 59	National Cash Register Co. 33
Boe Co., H. M. 52	National Rubber Filler Co. 51
Breco Electric Co. 52	National Wire Wheel Works. 8
Brunner Mfg. Co. 7	New York Lubricating Oil Co. 51
Butler Mfg. Co. 58	Norma Company of America, The 9
C	O
Cassidy Co., Edward A. —	Olympian-Motors Co. 61
..... Inside Front Cover	P
Catelain, Andre G. 58	Pan Motor Co. —
Chicago Baling Press Co. 57	Panvar Co. 57
Chicago Solder Co. 55	Pondelick Bros. 54
Commonwealth Edison Co. 48	Pruyn Ball Bearing Works. 57
D	R
Defender Auto Lock Co. 5	RED CROSS 41
Detroit Auto Radiator Co. 58	Reliance Co. 54
Detroit Weatherproof Body Co. 57	Romort Mfg. Co. 39
Dunton Co., M. W. 52	Ross-Gould —
E	S
Elgin Motor Car Corp. 10	St. Paul Welding & Mfg. Co. 53, 58
F	Scalfe & Sons Co., Wm. B. 56
Federal Sign System (Electric) 43	Shaler Co., C. A. Front Cover
Firestone Sales Co. 3	Schrader's Son, Inc., A. 51
Flexlume Sign Co. Back Cover	Security Auto Lock Co. —
G	Simplicity Wheel Co. 56
Ganschow Co., William. 55	Standard Electric Lamp Wks. —
Garden City Spring Works. 59	Standard Oil Co. of Indiana. —
Globe Mfg. Co. 31	States Chemical Co. —
Graham Roller Bearing Co., The 56	Sterling Engine Co. —
Greb Co., The 59	Storm Mfg. Co. 50
Greer College of Motoring. 58	Sunderland Machinery & Sup- ply Co. 58
Groetken Pump Co. 59	T
Guarantee Liquid Measure Co. 56	Twitchell Gauge Co. 61
H	U
Haney & Co., J. H. 47	United Engine & Mfg. Co. 52
Harton & Co., Inc., Thos. J. 45	Universal Battery Co. —
Harvey Spring & Forging Co. 37	Universal Industrial Corp. 59
Hobart Bros. 53	Universal Tool Co. —
Holmes & Bros., Inc., Robert. 57	V
Howell Co., The W. H. 53	Vacuum Muffler Co. 59
I	Vanderpool Vulcanizing Co. 55
Imperial Brass Mfg. Co. —	Visible Gasoline Dispenser Co. 56
Inland Machine Works. 53	W
Iowa Novelty & Brass Wks. 58	Warshawsky & Co. 58
J	Webber & Co., P. H. 50
Jenkins Vulcan Spring Co. 6	Weston Electrical Instrument Co. 29
Johnson Gas Appliance Co. 50	Wiggins, J. B., Co. —
	Willard Co., The 54
	Williams Fdry. & Machine Co. 43
	Willson, K. R. 57
	Z
	Zinke Co. 39

THE WAY TO SAVE HALF YOUR TIME in BOOKKEEPING



**FREE
Demonstrating
LEDGER**

EVERY reader of the AMERICAN GARAGE AND
AUTO DEALER should have a free copy of the

Akkurate
1918-1919

**Self-Indexing Ledger Statement
All in One Book**

Learn how to cut your bookkeeping time
one-half.

FILL OUT COUPON AND MAIL

Accurate System & Manifold Co., Inc.
12 Elm St., New York City.
Please send one FREE Demonstrating Self-Indexing Ledger Statement,
all in one book.

Signed

Tire Insurance

THERE is not one serious argument
to be advanced in favor of not buy-
ing a tire-pressure gauge.

Every man, woman or child who
runs an automobile not only should
have one but MUST have one if
he, she or it cares anything
about the mileage to be gotten
out of tires.

When you buy a gauge, you
pay for the gauge and save
on the tires.

When you don't buy a
gauge, you pay for the
tires and save on the
gauge.

Which would you
rather do?

**BUY
A**

TWITCHELL AIR GAUGE

PRICE \$1.25
and save your tires

The Twitchell Gauge Co.
1518 So. Wabash Avenue, CHICAGO



The New **OLYMPIAN**
4 cylinder, valve-in-head, 5 passenger Touring Car
\$1085
f. o. b. factory
OLYMPIAN MOTORS COMPANY, Pontiac, Michigan

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

CORK INSERT

The BRAKE LINING

with

GRIP

Cork Insert Brake Lining

takes hold at the slightest pressure. Takes hold, not with sudden violence, not with a racking grab, but with an *even friction*. The car slows up and stops without strain on brake, rear axle and transmission.

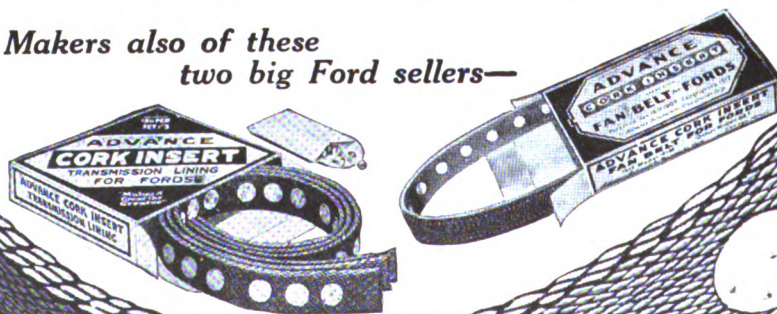
And this "take hold" efficiency is never lost. Cork Insert Brake Lining never gets glazed and polished. Oil and grease do not fease it. Deliberately pour oil on it and it won't slip. It insures a safe brake to the last mile of service—and outwears every other lining you can buy.

Cork Insert Brake Lining is SQUEAK-PROOF. This nerve-racking nuisance no longer is necessary. Cork Insert stops it. Next time your brakes are relined, insist on Cork Insert.

DEALERS: Think of it! Here's a lining that is slip-proof, oil-proof, grease-proof. All the shortcomings of other linings overcome. In addition, you get longer wear, economy. Cork Insert is going big! Order Cork Insert for big cars from the same jobber who sells you Cork Insert Transmission Linings and Fan Belts for Fords.

Advance Automobile Accessories Corporation
Dept. E-7, 56 E. Randolph Street, Chicago, Ill.

Makers also of these
two big Ford sellers—



For
All
Cars

For
All
Trucks

THRIFT

In the Repair of Casings, Inner Tubes and All Rubber Goods

means the use of

The Standard Tire Repair Outfit



Because It's

ECONOMICAL TWO CENTS' WORTH REPAIRS
THE AVERAGE PUNCTURE

EASY TO USE NO HEAT OR TOOLS NEEDED—
USE AT HOME OR ON THE ROAD

PERMANENT NEVER LEAKS OR LOOSENS—
OUTLASTS LIFE OF TUBE

Satisfy the National Demand



Place your order with your jobber—get the new, hermetically sealed Tire-Doh Outfits.
Good Profit.

50c Size

\$1.00 Size

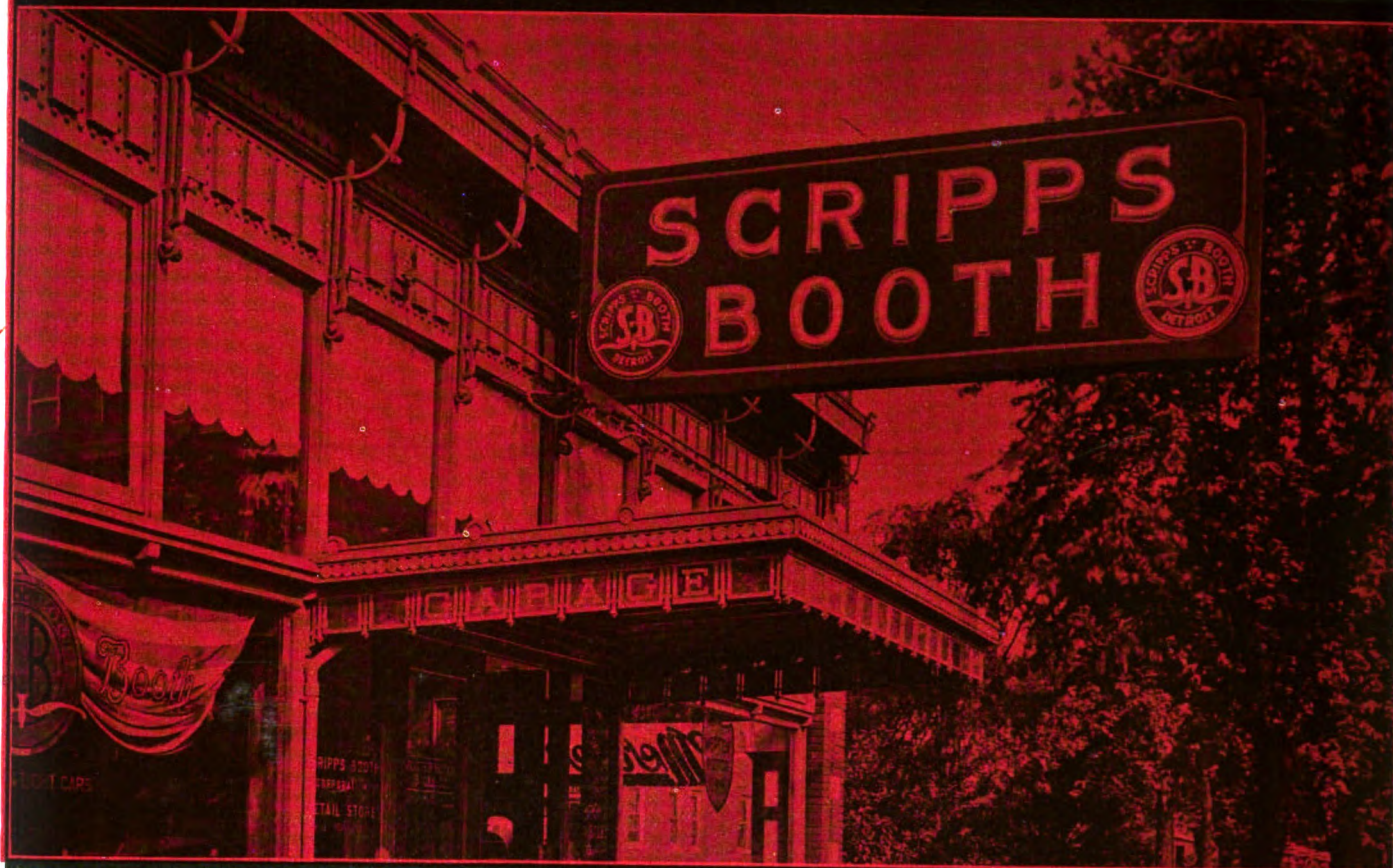
Ask Us for our New Selling Helps

MANUFACTURED AND GUARANTEED BY

ATLAS AUTO SUPPLY CO.

680 W. Austin Avenue

CHICAGO



Your Show-Room Should Have the Force of Electrical Advertising

THOUGHT for every detail—that is what gives the automobile sales agency the clean cut distinctiveness of quality, and nothing counts more than the sign. It is the beckoning finger which catches the notice of the thousands passing. It should reflect the spirit of the establishment. That is what a Flexlume Oplex sign will do. The solid outlined, raised, white glass letters have an air of restrained strength, maximum brilliancy, without straining for effect. For this reason bankers buy Flexlumes. They are the signs of quality.

FLEXLUME SIGN CO., Buffalo, N. Y.

Please send me free sketch and information in regard to Flexlume Signs.

(Bear in mind that the cost of the sign will depend upon the size and number of illuminated letters used.)

Signs should read, illuminated.....

.....

Wording not illuminated.....

To read one or two sides?.....

Vertical or horizontal?.....

NAME

ADDRESS

A. G. & A. D.

And with a Flexlume you gain the advantage of daytime display as well as brilliancy of illumination—those snow white letters on a dark background cannot be missed.

Flexlume interchangeable letters make it possible to change the reading of your sign at will if you prefer this style to the fixed letter kind. The change can be made in a few minutes.

Your store front should have the force of electrical advertising to help it win its way. Won't you let us send you a sketch showing how your new sign will look?

The Flexlume booklet, "Twenty-Four Hours A Day," is yours for the asking. Shall we send it?

THE FLEXLUME SIGN CO.

Potomac Ave. and Niagara Street

BUFFALO, N. Y.

Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.

Pacific Coast Distributors: Electrical Products Corporation,
941 West 16th St., Los Angeles, Cal.

AMERICAN GARAGE & AUTO DEALER



Volume 9
Number 6

CHICAGO

JUNE, 1918

\$1.00 Per
Year

SHALER

5 Minute Vulcanizer

THIS + THIS
VULCANIZES
YOU
AN
5 Minutes

Round Units for Punctures

Oblong Units for Cuts and Tears

Mends Tubes in 5 Minutes

Complete (With 12 Patch and Heat Units) \$1.50

The Vulcanizer, 6 Patch and Heat Units of round shape for punctures and 6 of oblong shape for long cuts and tears are included in the outfit. Each unit is complete—ready to use. No gasoline, acid, cement or flame required.

The Patch and Heat unit is placed over the puncture—the vulcanizer clamped in position and a match applied. In 5 minutes you have a perfect, lasting, "feather-edge" repair.

The SHALER 5-Minute Vulcanizer sells itself. You only need to place the display case on your counter or in your window.

The 12 Patch and Heat Units that go with the outfit are soon used up—and the motorist comes back to you for more—at 75c a dozen.

This repeat business pays you a good profit and brings motorists to your place regularly, who will also buy other goods!

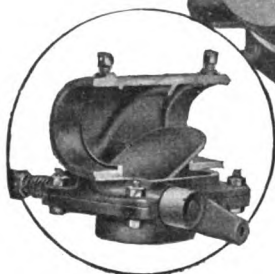
Place Your Order With Your Jobber NOW!

Don't delay! The enormous demand for SHALER 5-Minute Vulcanizers has exceeded our factory capacity to make deliveries. We are building a large 3-story addition to our plant—but to make sure of prompt shipments—place your order with your jobber now—specifying date of shipment desired.

Catalog describing the complete line of SHALER Vulcanizers for Motorists and Tire Repair Shops—Sent FREE on request.

C. A. Shaler Company, 356 Fourth Street, Waupun, Wis.

Sectional view
showing patent-
ed gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

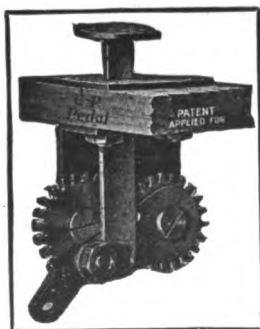
Watch your power

Every bit of power you waste cuts your speed and increases your cost. Save power, increase your pleasure, cut cost by putting a G-P Muffler Cut-Out on your car. With it you know definitely what your engine is doing. If a cylinder lays down, the G-P will tell you long before your unaided ear.

The G-P Muffler Cut-Out is simple in design

and strong in construction. Gases exhaust freely and without chance of back-pressure. Carbon does not accumulate. Built so staunchly that it cannot leak. Made in two parts to permit quick and thorough access. It saves gas, by keeping the engine right. Does more toward getting maximum power than any other one thing. It costs power and speed to be without it.

The G-P MUFFLER CUT-OUT and G-P PEDAL



The G-P Pedal is made entirely of steel, and is strong enough to operate any cut-out spring. The geared compound leverage makes it easy to operate.

Compounding of leverage and geared parts allows installation in minimum space. Its installation requires but one small hole

drilled in floor board. The locking device is on the bottom plate, so the pedal can be fastened to a steel or wood floor board of any thickness without altering its throw.

By releasing one screw the G-P Pedal can be changed to lift or pull in any direction. Operates any cut-out easily.



Sales Department

EDWARD A. CASSIDY CO., Inc.,

285 Madison Ave., New York City

Manufacturers: The G. Piel Co., Inc., Long Island City, N. Y.

WAR CONDITIONS make it *essential* to sell DEARBORN TRUCK UNITS

¶ Greatly curtailed pleasure-car production makes NOW the *opportune* time for YOU to take the DEARBORN TRUCK UNIT agency.

¶ War conditions favor the sale of DEARBORN One and Two-Ton truck units, as they will readily appeal to farmers, merchants and business men who otherwise hesitate to purchase a high-priced car or truck.

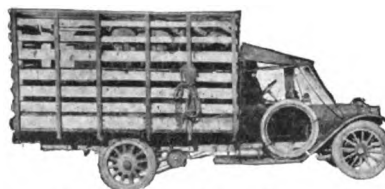
¶ A DEARBORN TRUCK UNIT is applicable to *any* make of car, and it will save a man \$500 or more. Show your prospects how they can be "thrifty" by using their old car, which, when converted into a DEARBORN One or Two-Ton truck, is as efficient as any truck they can buy.

¶ We are now located in our new factory, which assures you of *uninterrupted production*, and of as many TRUCK UNITS as you can sell.

¶ Write for full particulars regarding the DEARBORN TRUCK UNIT exclusive dealer plan.

DEARBORN TRUCK CO.

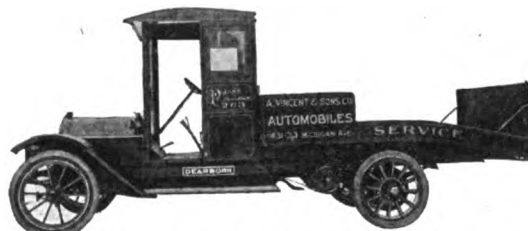
2524-2525 W. 35th St., CHICAGO



Dearborn One-Ton Unit Attached to Buick Chassis



Dearborn One-Ton Unit Attached to Oakland Chassis



Dearborn One-Ton Unit Attached to Cadillac Chassis



Dearborn Two-Ton Unit Attached to Packard Chassis



Dearborn Two-Ton Unit Attached to Cadillac Chassis



Dearborn One-Ton Unit Attached to Ford Chassis



Dearborn Two-Ton Unit Attached to Pratt-Elkhart Chassis

"You don't have to buy from us, but you will"



Mr. Dealer and Garageman

If you assure the Automobile owner, throughout the country, that he can purchase all of his accessories through a well-organized chain of retail stores and that he will receive uniform quality and product without substitution or delay, he will become a customer of yours.

Retail chain-store corporations, as you know, are successful in every line.

Our business is the Automobile Accessory Business and is founded upon and governed by the methods which have been successfully employed in other industrial lines. These methods protect those who become one of us and elevate the motor accessory field to a plane approaching perfection, finally resulting in satisfied dealers and consumers.

Our Policy is

ECONOMY, EFFICIENCY and BETTER SERVICE

If you want to know what is necessary to become one of us—

If you want to know what you have to do to become one of us—

If you want to know why it will pay you to become one of us—

If you want to know what we do for you when you become one of us—

If you want to know how we increase your business—

If you want to know how and why our name will become a household word to the motorists throughout the country—

If you are the man with enough foresight to grasp an opportunity and take advantage of it when it is presented to you—

Write Us for Further Information

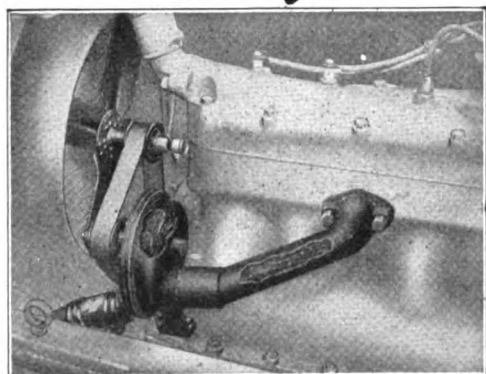
MOTOR ACCESSORIES CORPORATION

H. J. Curtis, Genl. Mgr.

170 Broadway, New York

"You don't have to buy from us, but you will"

**You'll have no dull days if you
sell FIRESTONE ACCESSORIES!**



FIRESTONE FORD CIRCULATOR

For Ford cars, tractors, or trucks. We guarantee this centrifugal circulator to keep the motor so cool that you can lay your hand on the radiator after running several hours idle. Saves its small cost to the car owner in lubricating oil alone.

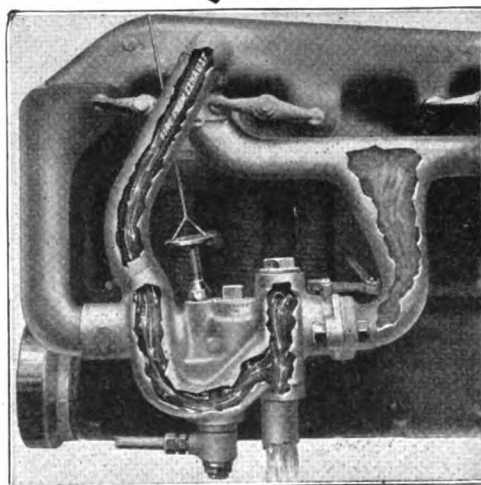
Eliminates the pounding from the motor and decreases carbon trouble.

Easily installed on any Ford.

Retail price, **\$9.00.**

Liberal profit to dealers.

Firestone Sales Company
1806 Michigan Ave.
Chicago, Ill.



GILSON FIRESTONE CARBURETOR **31 Miles Per Gallon**

Adds many times its cost to the value of any car. This carburetor burns kerosene better than any other carburetor burns gasoline. It also will burn kerosene, distillate or gasoline without any readjustments.

Price Complete, Ready to Install, Carburetor for Gasoline only, **\$18.00.**

Carburetor for Kerosene (coal oil), including extra tank and water circulator, **\$30.00.**

A big seller for the trade.

DEALERS—Send in this Coupon today.

Firestone Sales Co., Date.....
1806 Michigan Ave., Chicago, Ill.

Please send me literature, dealers' discounts and sales plan on the
Firestone Ford Circulator.
Gilson Firestone Carburetor.

Name

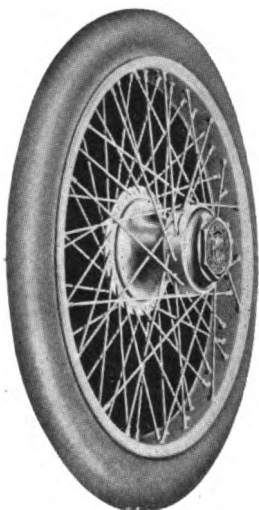
Address

City....., State.....

A REAL MONEY-SAVING

with PASCO Wire Wheels is not mere "theory." It's an actual, acknowledged fact. On tires, on gasoline, on car repairs, the first season's saving will practically pay for a set of PASCO wheels.

To all these add increased riding comfort, safety and quick-change features, and you will realize why PASCO Wire Wheels have caused a commotion among dealers and buying public.



Both pleasure and delivery cars are rapidly being equipped with PASCOS.

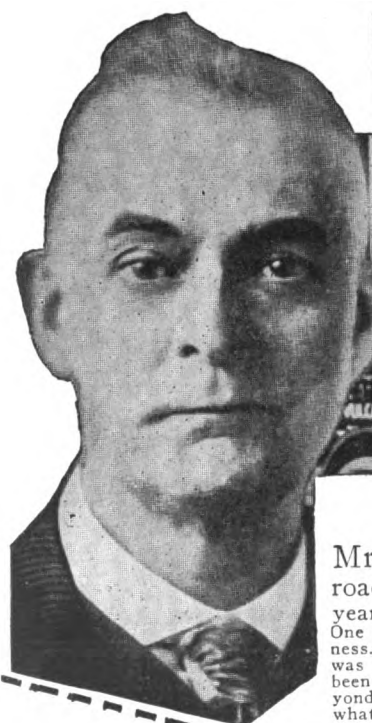
Aeroplanes, too, are carrying PASCO wheels in ever-increasing numbers. Proof positive of rugged strength and elasticity.

Dealers: Write for interesting sales plan

NATIONAL WIRE WHEEL WORKS, Inc.

Dept. G, GENEVA, N. Y.

Service Stations in Principal Cities



I EARNED \$2200.00 IN FOUR MONTHS

This Is Richard A. Oldham

Mr. Oldham was telegraph operator for the Illinois Central Railroad for twenty years. He is fifty-eight years old. During all those twenty years, he drew the customary monthly salary of a telegraph operator—no more—no less. One day he read one of my advertisements and the possibilities of making money in the Auto Tire Repair Business. In a few weeks he had purchased and installed a Haywood outfit, and was doing business for himself. He was **His Own Boss**. A short time ago he wrote us that his income in four months was as much as it had been in Two and One-Half Years as Telegraph Operator. You men who have been left at home—who are beyond the draft age, can and must take up the burdens left behind by others. Oldham is a living example of what can be done. I have 500 places to be filled now. 500 stations where tire repairing is neglected, because there is no one to do it.

I Must Have 500 Men to fill these places within the next sixty days

I have a big interesting book to send you—a book about tires—it explains this business—gives inside figures and profit. Gives actual proof of success—letters of others who are now operating Haywood Shops and making big money. What these men have done you can do. \$2,500 to \$4,000 a year is conservative. One machine will give you a start. You can see business all around you—everywhere there are automobiles there are tires that need repairing. You know that. All you do is open a shop—put out a Haywood sign, and auto owners will come to you and the service you bring them.

Sign the coupon and mail it today, or send a post card or letter.

HAYWOOD TIRE & EQUIPMENT CO.

M. HAYWOOD, President

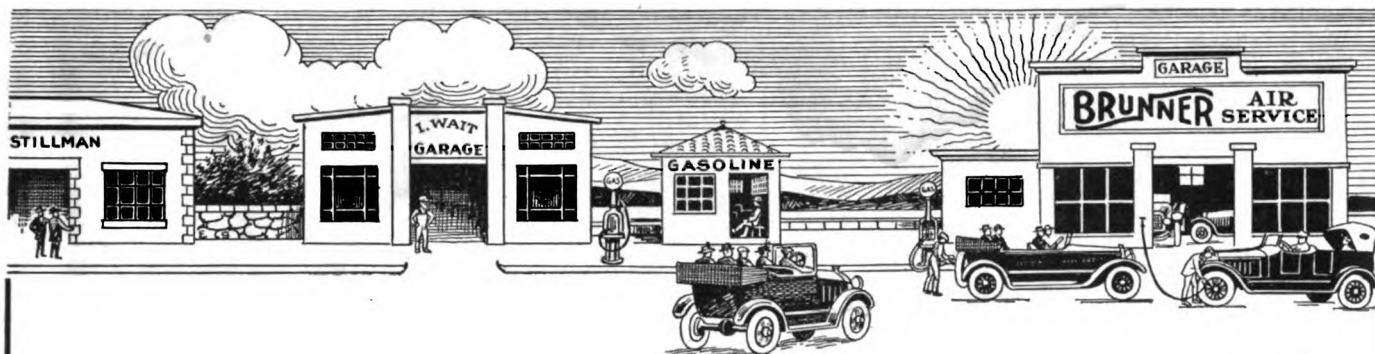
650 Capitol Avenue, INDIANAPOLIS



M. HAYWOOD, Pres.
HAYWOOD TIRE & EQUIPMENT CO.
650 Capitol Avenue, Indianapolis, Ind.

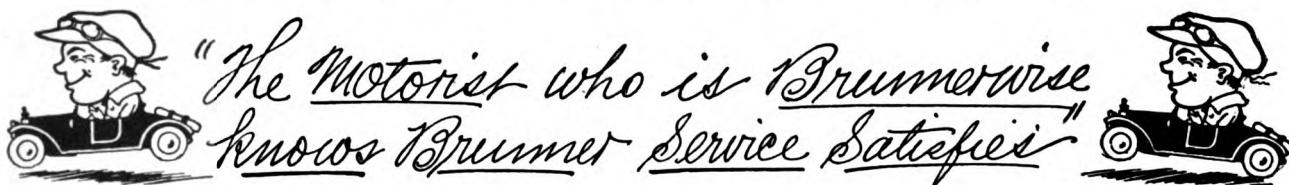
Dear Sir: Please send me your book on Haywood Tire Repair Plants and full particulars on your National Tire Repair Service and details of your FREE school of tire repairing.

Name
Address



Mr. Garageman, if you have a Brunner Air Compressor in your garage and are not displaying a Brunner Sign on your garage advertising the fact that you are rendering Brunner Service, you should send for a Brunner Sign without delay—

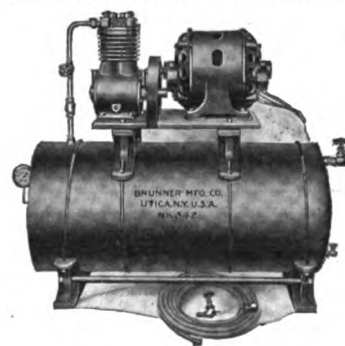
Advertise your Brunner Service and secure your full measure of the Brunnerwise Motorists' patronage



Thousands of garagemen have been advertising Brunner Service by means of the Brunner Sign for many years and Brunner Service has consistently demonstrated its absolute dependability to thousands of motorists for many years, so that these Brunnerwise Motorists now recognize the Brunner Sign as a sure sign of absolutely dependable service wherever they see it.

In this way the great advertising value of the Brunner Sign has been convincingly demonstrated to the garageman in actual service for many years, and the thorough dependability of Brunner Service has likewise been demonstrated to the motorist.

No garageman without a Brunner Air Compressor can afford to overlook this splendid opportunity of securing the patronage of the Brunnerwise Motorist—a Brunner Air Compressor will do it.



WHEN YOU BUY A **BRUNNER** AIR COMPRESSOR

You buy a high grade practical compressor designed and developed for the garageman's use in the largest and best equipped exclusive garage air compressor plant in the world, and backed by a responsible organization whose entire time and attention has always been exclusively devoted to the garageman's interests.

No attachments necessary to help the motor to start against full load.

No cages necessary to keep the valves from falling into the cylinder.

No restriction of lubrication to invite trouble and no claims of impossible performances—but—simply the same good substantial business proposition it has always been for the garageman.

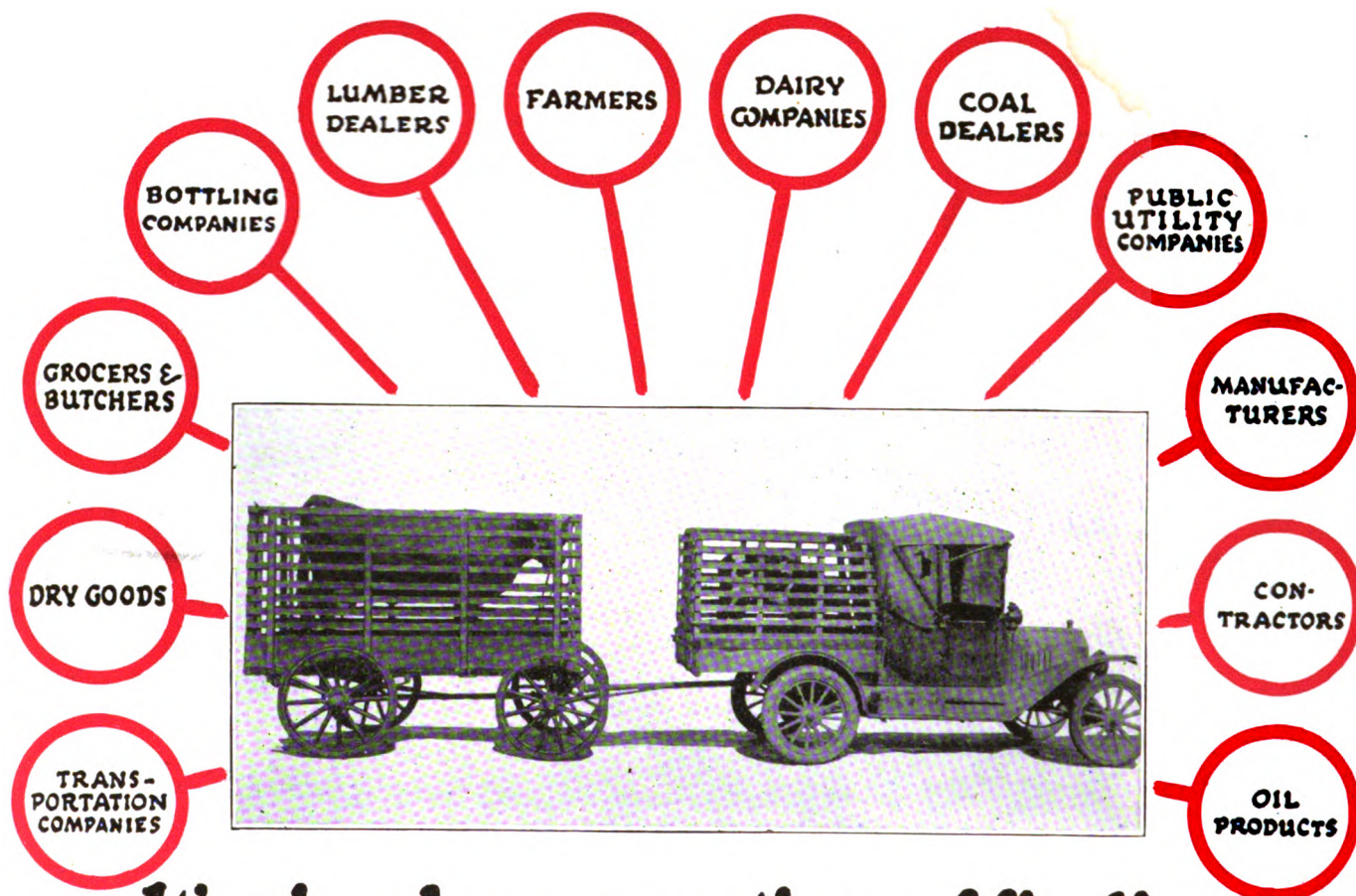
Write for No. 15 Catalogue and name of Brunner jobber covering your town

BRUNNER MANUFACTURING COMPANY

General Offices and Plant
UTICA, N. Y.

Cincinnati Branch
CINCINNATI, OHIO

You have an astonishing number of prospects for MIAMI TRAILERS!



It's simply a question of finding the RIGHT dealer. ARE YOU THAT DEALER?

If you feel that YOU are a logical MIAMI dealer, write us immediately. Now's the time to make "substantial profits" selling MIAMI TRAILERS. The opportunities are all yours—you can sell as many as you want, and you can get as many as you sell. **You have an astonishing number of prospects for MIAMI TRAILERS.**

Another advantage in selling MIAMI

TRAILERS now is that it is practical "war time economy." A MIAMI TRAILER is not in the luxury class—it's a necessity, and a great time saver. Neither does it represent a burdensome investment such as a motor truck or pleasure car. MIAMI TRAILERS are made in a number of styles and prices—**anybody can afford a MIAMI TRAILER.**

If you measure up, wire or write at once

Let us send you further particulars as to what other MIAMI dealers are doing

MIAMI TRAILER COMPANY

TRAILER STREET—TROY—OHIO

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

Help Organize and Run Rural Motor Express Lines.	24
How Big We Are	24
After the War	24
Women in the Automobile Industry	24-25
A Duty of Motor Tradesmen	25

GENERAL

Acres of Diamonds—Russell H. Conwell	11
What Is YOUR Income?	12
Slow Turnover—FAST Turnover	12
Nation's Growing Demand for Steel Urges More Use of Truck Makers	13-36
Automotive Exposition Plans to Show Industry's Essentials	14
David Jameson, Twelfth President of Three A's	14
Women in Industrial Field Adapt Selves to Conditions	15
Girl Is Good Salesman and Also Radio Expert	15
Friendly Electrical Signs Beckon Dollars to Your Door	16
Advice to Ford Owners in Box of Cork Insert	16
Let YOUR TRADE Know You're on Earth	17
Use of Rural Motor Express Lines Advocated by Council of Defense	18-19
Flexlume Signs Liked by Motor Tradesmen	19
Some Sample Advertisements Used by Live Motor Tradesmen	20
Send in Your Advertisement—It May Win Some More Money	21
Harper Uses Novel Plan to Stimulate Car Sales	21
Fix a Window Display, Kodak It. Send Picture for Reproduction	22
Elgin Prices Raised	22
Norwesco Displays Help Dealers Sell More Goods	22
Boulcott Is New Delco Advertising Manager	23
Makers' National Body Aids Rural Motor Express Lines	25
Trucks Move Fleet Corporation	25
Window Displays Will Sell Tires	26-27-29
New York Food Commission to Demonstrate Tractors	28
U. S. Army Ordnance Tractor	28
Requests Tractor Owners to Keep Machines at Work	28
Service Biggest Factor in Selling of Tires	29
Auto Parts, Milwaukee, Now Badger Mfg. Corp'n	32
Miller Rubber Company Opens Pittsburgh Branch	32
Mechanical Writer Takes Up Truck Service Duties	34
Trucks Needed to Break Bad Freight Congestion	36
Brake Inspection Plan Endorsed by Officials	36
Olympian Four to Try High Gear Road Test	36
Demand for Dearborn Units Forces Truck Firm to Move	38

DEPARTMENTS

How to Make the Shop Pay	23
Welding, Cutting and Brazing	30-32
Mechanical and Engineering Problems	34
Accessories and Garage Equipment	40-42-44-46
Buyers' Reference	60
Index to Advertisers	61

American Garage & Auto Dealer, Inc.

General Offices:
116 S. MICHIGAN AVENUE
CHICAGO, ILL.

Krege Building,
Detroit, Mich.

52 Vanderbilt Ave.
New York City

J. R. HASTIE, President
H. D. FARGO, Vice President E. C. HOLE, Vice President
E. T. CLISSOLD, Vice President
J. C. KELSEY, Secretary and Treasurer

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Geo. M. Allen, Manager Copy Department

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"NORMA" PRECISION BALL BEARINGS

(PATENTED)

The highest speeds in car or truck—many times the speed in any other part—are carried by the magnetos and lighting generator. At high car or truck speed, the speed of these accessories may reach tremendous figures. Is further argument needed, to demonstrate the vital necessity of speed-ability in ignition and lighting apparatus?

For years past, in America and abroad, in the magnetos and lighting generators invariably identified with cars and trucks of notable dependability, "NORMA" Ball Bearings have been the standard bearings. Their pre-eminence in this field is the result of an unbroken record of satisfactory performance.

Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.



When Your Spring Breaks Put On

VULCAN
QUALITY
VULCAN
The Replacement Spring

That's the message now being carried to millions of car-owners through the pages of National publications such as:

Saturday Evening Post,
Colliers Weekly,
Leslies Weekly,
Automobile Blue Book
and all Trade Papers.

To Dealers: You need this display rack full of **quick-selling**, replacement Vulcan Springs—and you need it **now**. If you are one of the 3,000 live dealers who already have it, see that your stock is complete. Order what is short.

Here is something you want—

Real Profit With Small Investment

Our display rack is **FREE** to you with an order for one dozen or more assorted Vulcan Springs. Owners want service. They are already sold on Vulcan Springs. Now it's up to you to cash in on this advertising and good reputation and pocket the big profit that is yours. When the car owner drives up and asks you to "put on Vulcan"—be prepared. He wants **service**—real service. Give it to him. You need this kind of profit that requires no growing investment. Vulcan Springs move fast. Wake up!

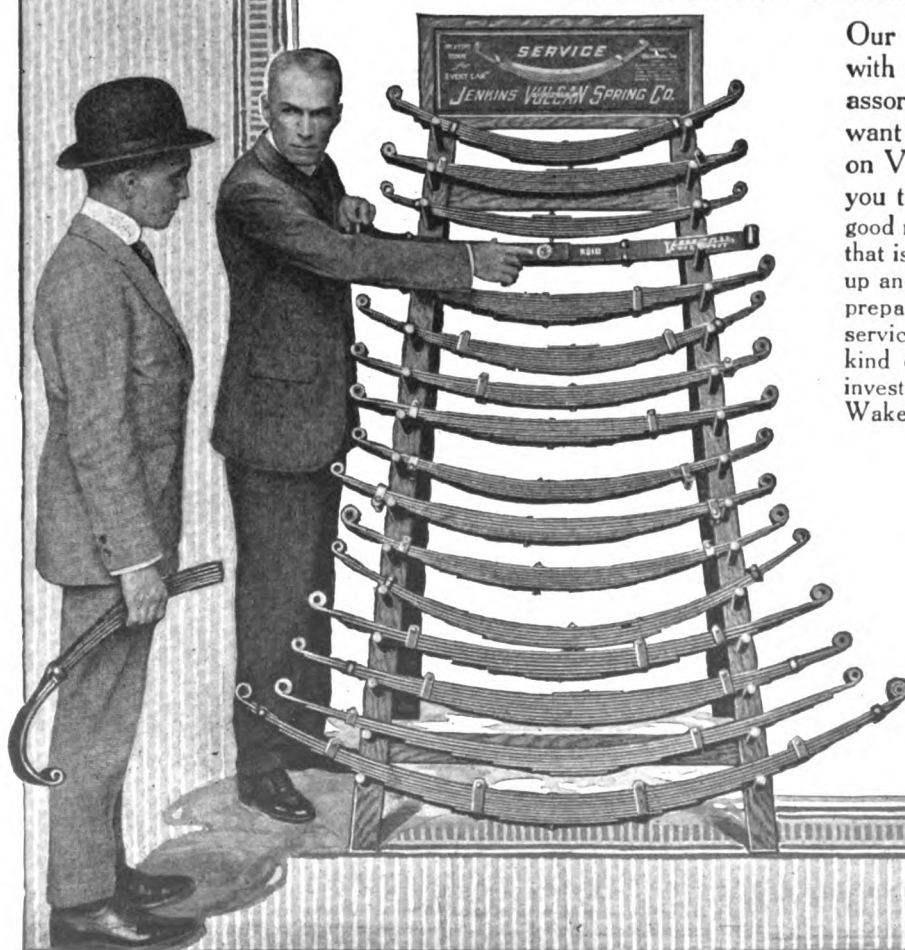
Write Today for Our
Spring Rack Proposition.

**JENKINS VULCAN
SPRING CO.**

Richmond, Ind.

Factory Branches

St. Louis, Missouri 1402 Chestnut Street
Minneapolis, Minn. 1024 Hennepin Ave.
Dallas, Texas 209 South Houston St.
Reading, Pa. 538 Franklin Street
Sumter, S. C. 29 Caldwell Street



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

AMERICAN GARAGE & AUTO DEALER

Comprising

AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX, No. 6

CHICAGO—Detroit—New York

June, 1918

Acres of Diamonds

"Russell H. Conwell."

Ali Hafed was discontented. Instead of a fine farm, he wanted diamonds.

He sold his farm and wandered about the earth, seeking diamonds, and only finding starvation, hardship, and eventual death.

His successor, drinking at the spring, saw a gleaming stone and discovered Golconda, the richest diamond mine in the world.

Had Ali Hafed stayed at home and dug in his own cellar, or underneath his own wheatfields, or in his own gardens, he would have had, instead of wretchedness, discontent and death, acres of diamonds.

A California farmer, hearing of a gold discovery elsewhere, almost gave his farm away to Colonel Sutter, who found millions of gold in its creek.

A Pennsylvania farmer, hearing of oil discoveries in Canada, sold his farm for \$833, which later gave a billion dollar oil business to his successor.

The automobile dealer, living in a prosperous farm community, where cars, trucks, and tractors are absolute necessities, can easily take a lesson from the three property owners, who carelessly chose hardship, poverty, and death, while their successors found acres of diamonds, pockets of gold, and pools of oil.

In every community there are acres of diamonds for the dealer who will dig deep in the car, truck, and tractor garden literally under his feet.



What Is *YOUR* Income?

Energy in Extending Your Business Will Win a Place Among the Tax Payers

WHAT IS *YOUR* INCOME?

Are YOU going to pay Uncle Sam an income tax June 15?

Are YOU one of the 5 per cent crowd which makes \$3,000 and more per year, or are you satisfied to ride along with the 95 per cent class, which is contented with less?

It may seem to YOU like a big gap to look from \$2,000 or \$3,000 up to \$10,000 or \$15,000, but if you think so, then the gap is big. Some there are who imagine that they are handicapped. Take two cases for comparison.

In the same city in almost identical locations are two dealers—one because he is a better merchant or tradesman than the other, generally makes almost four times as much. Yet he has no more prospects, but he succeeds in making his income larger because he discovered *how* to do it.

Several years ago, a metropolitan newspaper engaged an alert looking young man as advertising solicitor. He sold automobile advertising, but was not satisfied with his income. He wanted to climb—and he *did* climb—and kept climbing until today he is reputed to make more than \$100,000 yearly. *He's the president of his own business.*

Uncle Sam is glad because there are many enterprising garages and automobile dealers who pay a substantial tax on their incomes. So should you be glad if you are one who pays, but you should be determined if you do not, before another year has elapsed, to ascend higher—*get in the "big income class."*

Never have opportunities been more numerous than now, for thoughtful and hard working automobile dealers and garage owners, to make money by selling many of the things which farmers and merchants require.

There's a way for you to increase *YOUR* income if you are but willing. Get a *truck-unit* agency, or sell tractors or trailers, or increase your sales of accessories.

The personality of a man is usually reflected in his business. Some automobile dealers and garagemen because they have been good merchants and tradesmen, have established a volume of business which is a creditable monument to their persistency and ability. They deserve their present income and success. There was a time when they, too, like you had incomes considerably smaller, *yet they succeeded in bridging the gap.*

Get infected with a liberal dose of enthusiasm, then keep pushing until you have pushed yourself into the class of the men who about your town are known as the fellows "who have arrived."

Slow Turnover— FAST Turnover!

Are profits slipping through your fingers because of slow turnover, or are you "reaping the harvest" by a fast turnover? You are at fault if you have slow turnover—there's no excuse for it.

If YOU ARE A BUSINESS SLACKER, then you may never expect a fast turnover. Fast turnover, which is another way to say—quick sales and good profits—is to be especially desired.

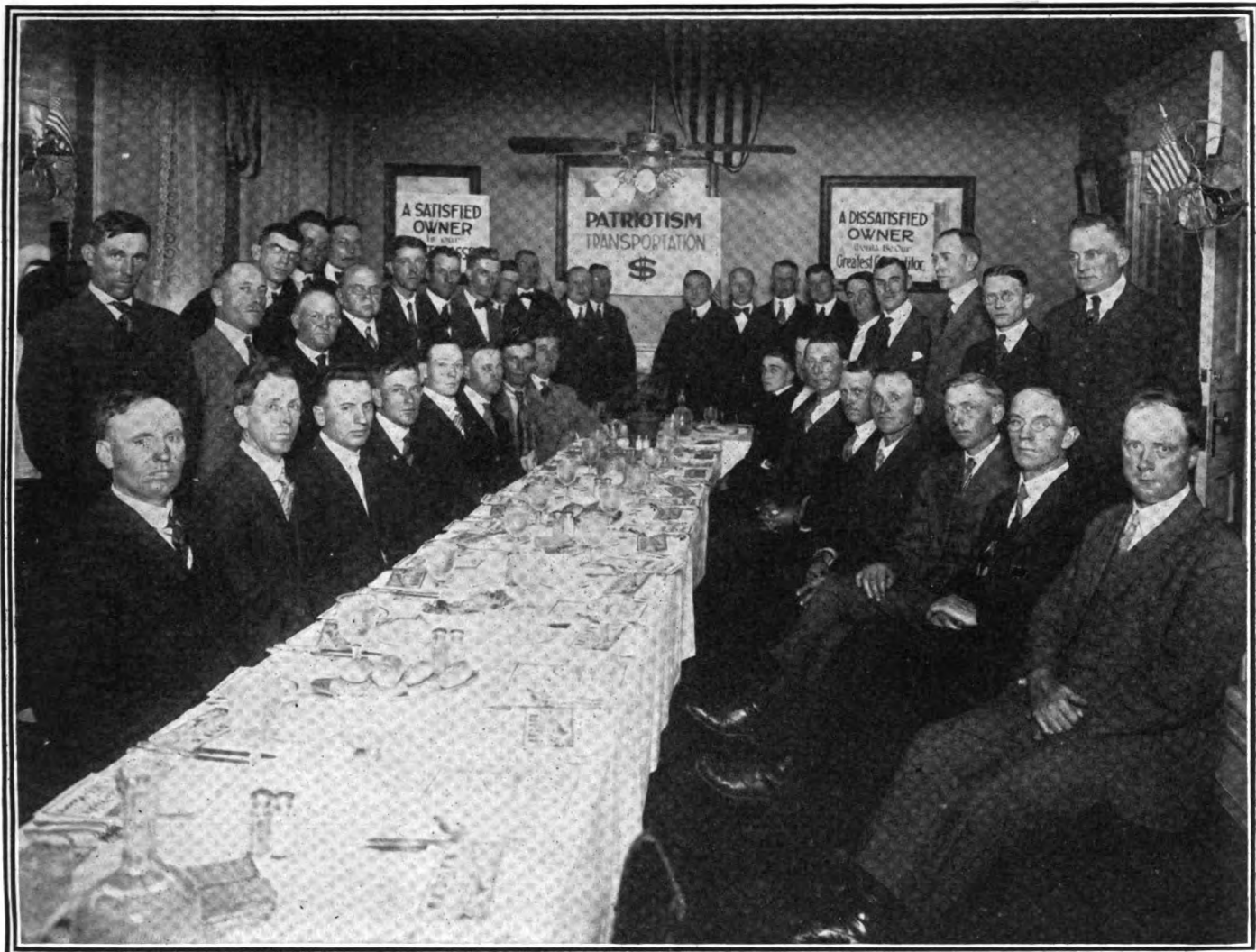
The ledger tells the story. If it shows that you are carrying a large assortment of accessories, none of which "is turning over" very quickly, you are tying up too much of your working capital without realizing thereon.

Rather than go slowly and take a long profit, sometimes it's better—frequently so—to take a little less profit providing more sales can be made. Aggregately speaking, it's the FAST turnover that puts the cash into the cash register.

Alternate your accessories. Don't concentrate too much on one line—feature them all!

A sale made on a little article oftentimes leads to a BIG sale. KNOW WHEN TO SELL YOUR CUSTOMERS. Encourage them to have their cars overhauled when in need of repairing. Be "on your toes" and push tires and body polishes. Or, tell them what good brake lining you carry. Call their attention to your springs or piston rings, oils and greases, locks, wire wheels, and battery charging service.

Instead of merely featuring one or two good accessories—bring all of them into the "limelight." Dusty stocks suffer for lack of turnover—even *YOUR* trade appreciates clean and neat looking purchases. It doesn't cause any more trouble to have FAST TURNOVER, and you will soon find that it makes you "heaps" more money. Get the idea!



Tradesmen gathered to hear Mr. Hipple's talk on profit possibilities in selling truck makers.

Nation's Growing Demand for Steel Urges More Use of Truck Makers

Attachments and Passenger Car Engines Provide Needed Transportation at Small Labor and Material Cost

By **GEORGE W. HIPPLE**
General Sales Manager
Redden Motor Truck Company, Inc.

Automobile dealers will be especially interested to learn that, owing to the vast amount of steel required by the Government for various war purposes, officials at Washington are inclined to look most favorably on truck attachments, and will no doubt encourage the buying public to purchase them because the Government fully appreciates the absolute necessity for trucks.

At the same time those in authority at Washington are most desirous of having ways and means provided which will make it possible to secure motor truck transportation with as little consumption of material and use of labor as possible.

The saving of labor is of most vital importance in producing trucks, to say nothing of the saving in man power when the truck is put into actual service.

The truck maker or attachment gives the small automobile dealer a chance to enter the motor truck business at a very small investment. At least three-fourths of the truck has already been delivered to his town in the shape of a used passenger car. This is not salable for its full value, only because it lacks up-to-date, modern equipment. But still it has a good engine and can be converted quickly into a sturdy and durable ton or ton and a half truck at a low cost.

I have just returned from a trip in the Middle West. I found one comparatively small firm in Hiawatha, Kan-

(Continued on page 36.)

Automotive Exposition Plans to Show Industry's Essentials

Management Aims to Support the Government in Solution of Transportation and Food Production Problems

Organization of committees having been completed and the work of the next three and one-half months having been thoroughly outlined, the Automotive and Accessories Exposition, Inc., tendered its second dinner to its officers, directors, stockholders, committeemen and the press Monday evening, May 27, at the Hotel Sherman, Chicago.

An interpretation of what the truck, tractor and accessory industries mean to transportation and agriculture was given by the various speakers, chief among them being Philip A. Grau, Harry Newman, Frank B. White, managing director, Agricultural Publishers' Association and Paul D. Watson, of the Charles F. W. Nichols Co.

Although actual work of the organization for the second annual exposition, on Chicago's Municipal Pier, September 14 to 21, has been under way only a short time, support of the plans and activities is coming from many sources and there is every reason to believe that this exposition will disclose, when it opens to the public, the most representative showing of the essentials of the automotive industry ever presented at one time.

The purpose of the exposition and the aim of the management is to support the Government in the solution of the problems of transportation and food production by promoting the use of trucks and truck attachments for long and short hauls and farm tractors and tractor attachments for doubling farm cultivation without extra laborers or horses.

Much Space Available.

The exhibition room has no counterpart. Measuring 68 feet wide and 2,340 feet long, without a post or obstruction, it offers more space to each division—that is, trucks, tractors and

accessories, individually—than any other show building now constructed. Trucks, tractors and accessories will each be allotted approximately 50,000 square feet of space, the accessories exhibit to be on the east or lake end of the pier, trucks in the center and tractors at the west end of the pier.

A unique plan of decoration is being arranged for the trucks and tractor spaces. This plan calls for a panorama which will show as a setting for the tractors, the evolution of agricultural work from the time of the ox and the wooden plow down to the most modern tractor farming, while the truck spaces will be backed up by a panorama showing the evolution of transportation. These scenes will be actual reproductions of photographs showing trucks and tractors in operation and insofar as possible the scene back of an exhibit will depict actual work with the trucks or tractor displayed in the booth in front. Over the top will be a sky effect that will blend in with the panorama on each side.

Some idea of the magnitude of this decorative plan may be gained from the fact that the side walls on which the panorama will be painted will contain over 31,000 square feet of canvas, or if cut into one strip one foot wide, would reach over six miles. The overhead span is 68 feet across.

Plans now under way for making Chicago during the period from September 14 to 21, next fall, the center of the automotive universe include many things of interest to everyone. Conventions, racing, war gardening, canning clubs' exhibits, etc., are only a few of the plans which will be put into use to bring a crowd to Chicago's Municipal Pier such as never has viewed this "seventh wonder" of the city before.

David Jameson Twelfth President of Three A's.

David Jameson, of New Castle, Pa., one of the vice presidents of the Pennsylvania Motor Federation, is the twelfth president of the American Automobile Association, having been elected at the recent annual meeting held at Atlantic City, N.

Since the American Automobile Association was organized in March, 1902, at Chicago, it has had an illustrious list of chief officers, beginning with Winthrop E. Scarritt of New York City. His successor was Harlan W. Whipple, a New Englander who also had become a New Yorker, and after him came Dr. Julian A. Chase of Pawtucket, R. I., who was followed by Elliott C. Lee of Boston, Mass.



David Jameson.

Next came John Farson of Chicago. Then the presidency shifted to Buffalo, N. Y., with William H. Hotchkiss as the occupant. Lewis R. Speare of Boston succeeded him in his third year, when Mr. Hotchkiss was selected by Gov. Charles E. Hughes of New York state to be the superintendent of insurance.

Robert P. Hooper of Philadelphia was eighth in line, and he was followed by Laurens Enos of Buffalo. John A. Wilson of Franklin, Pa., cousin to the illustrious member of the Wilson family who lives in the White House, then served for two and one-half years, giving way to Dr. H. M. Rowe of Baltimore, Md.

Mr. Jameson is a banker, besides which he is concerned in various lines of business and bears a high reputation in commercial circles in western Pennsylvania.

Women in Industrial Field Adapt Selves to Conditions

Employment Manager Declares Physical Limitations Are Only Boundary of Their Activities

"Women engaged in industrial work, in the shop and factory, are adapting themselves to conditions, and grasping the fundamental principles of their work with a readiness and efficiency that is truly surprising and gratifying."

The above statement from E. F. Primer, manager of the employment department of the National Cash Register Company, Dayton, Ohio, is based upon close study and information obtained at first hand. He further said:

"While an untold number of reports have been made, the subject of women in industry is constantly enlarging. What seems strange and startling today is commonplace tomorrow. Government reports, magazines and newspapers daily are filled with statements about the ever-widening horizon of women's work. Women are eligible for employment in so many unusual occupations that it would be difficult to briefly enumerate them. There seems to be, however, only one boundary to the field of women's activities, and that is imposed by physical limitations. No one will argue woman's physical equality.

"In England, where there was a national desire to help meet the terrible emergencies of the war, women unwisely overrated their strength and set themselves at tasks which later proved detrimental to their health. American industry, profiting by the experience of England, wants continued output, rather than sporadic bursts of efforts. Every man and woman in industry today, or in the future, must realize that it is the steady pull that will count at this crucial period in the world's history.

War Not Sole Cause.

"While the great influx of women into industry was hastened by war conditions, yet it has not been wholly due to that cause. Armies of women are earning their own living because of the stress incident to the increased cost of all things. Hundreds of women have gone into the industries because they desire to be independent, and they do not regard their jobs or positions merely as bridges over the gap until marriage.

"Their induction into industry will have a beneficent, permanent result. It will mean the introduction in many factories of systems that are important to the health, safety and welfare of all employees. Improper surroundings will be eliminated and labor in general will be better off and better satisfied because of more desirable working conditions.

"There are, however, some things the women must be taught besides being given specific training for specific work. They must learn to be regular in attendance, because they cannot expect to earn good wages unless they work steadily. They must adopt a business-like attitude toward their work, and regard their tasks as an opportunity for personal training, whether they expect to use their experience in the field of industry or elsewhere.

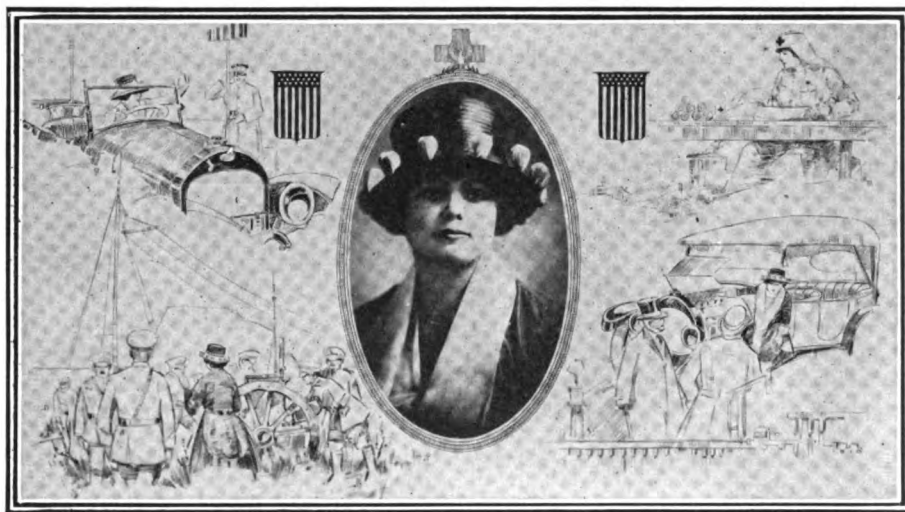
Must Regard Health.

"They must regard health and hygiene as a business asset. Women are notably careless in matters pertaining to health, and frequently are unaware of the part poor health plays in reduced earnings or future

the men are called for military service. Our company has positions for many women."

Girl Is Good Salesman and Also Radio Expert

Miss Mary Whiteman, of New Orleans, is an automobile salesman. Motor car merchandiser first, for she has a number of other titles, all earned by hard work and study. Among them are radio expert and teacher; qualified instructor in one or more branches of Red Cross work, and expert motor driver. She has even taken cavalry maneuvers, last summer under the direction of Sergeant Sutter, who is now in France.



Miss Mary Whiteman of New Orleans and some of her activities as depicted by a Willys-Overland artist.

happiness. They must be frank, straightforward and forego the privilege of having 'feelings.' If they remove the handicap of claiming privileges because of sex, they will find greater opportunities for advancement and sooner realize their ambition of equal work for equal pay.

"This company has always employed a large number of women for clerical and other work, and with very satisfactory results. However, it was only when the war came, completely changing industrial conditions throughout the United States, steadily decreasing the number of men available for both skilled and unskilled work, as the demands for war materials increased, that it was found necessary to employ more women in this factory. They have made good in a manner so satisfactory that the opportunity for women to engage in industrial work here will be greater each day, as

Having driven an Overland for some time, Miss Whiteman was in the showroom of the Demack Motor Car Co., Overland headquarters in the New Orleans territory, and in the course of conversation George Demack spoke of the difficulty in getting salesmen on account of the scarcity of men everywhere.

"I can sell cars," Miss Whiteman said suddenly to Mr. Demack. "I can sell Overlands," she added.

"You've got a job, then," was George's reply, and she began next morning.

Miss Whiteman sold her first car within two days after joining the Demack forces, and her second one a few days later. Both cars were sedans. She is the only woman car salesman in New Orleans, and perhaps in the South, as far as is known. Tuesdays and Fridays she teaches radio work to the officers and men at Camp Nicholls.

Friendly Electrical Signs Beckon Dollars to Your Door

Your Neighbor and the Transient Motorist Alike Are Attracted by Cheerful Blaze of Lights

An automobilist is nearing a strange city at night. He has been driving all day and is tired and hot and dusty and cross. He wants two things—a place to put his car and a place to put his head.

Normally this man will drive into the outskirts of the city and then either stop to inquire the location of the best garage and hotel, or he will search for his flash and consult his route book.

But suppose that when he is five miles away two spots of light appear against the black of the sky, spots that grow brighter and more distinct as he comes along until they define themselves into two flashing messages, one sending out the invitation, "Royal Hotel," and the other blazing the single word, "Garage."

That's enough. That man will not stop to consult a policeman or a passerby. He won't go to the trouble of searching for his electric flash and his route book. With eyes glued on those two beacon lights, and with the new burst of energy that comes when your goal is in sight, he will put his foot on the accelerator and shoot ahead.

And it isn't only the man who is looking for a garage in a strange neighborhood. There is the man who glances at his gasoline meter and realizes suddenly that he has a scant gallon of gasoline and 25 miles to go. And there is the man who finds that he needs oil and the man whose silent engine unexpectedly begins to emit noises like a locomotive, and the man who comes poking into town with two flat tires and a ruined disposition.

Every one of these men wants a garage and wants one quickly. He isn't in a mood to inquire around getting recommendations and estimates. He will go to the place that is most easily found.

And an electric sign, forcing its welcome message on his consciousness at the psychological moment will act like a magnet. He may go straight past two or three competitors who are not wise enough to flash *their* messages out at him. He will come straight to your sign. Then all you have to give him is service and he will follow that light again.

The more unusual the sign is the more valuable it will prove to the garage man. We all know how an unusual sign will fix itself in our minds. When we think of electric signs we think of the fantastic, elaborate display on Times Square in New York or of the gigantic revolving marvel

at the foot of Michigan Boulevard in Chicago, or of some less pretentious but equally compelling sign which attracts by its uniqueness or its beauty.

Not only do we think of electric signs in terms of these particular signs, but when we think of certain articles we think of the brands these signs advertise. We have a cough. The electric druggist compounding electric drugs at Smith's drug store flashes across our minds. We go to Smith's. We are hungry. We picture to ourselves the electric waiter offering an electric steak to an electric diner at Brown's restaurant. We go to Brown's. And we order steak.

To the man who seeks a garage in a certain neighborhood the memory of an electric tire rolling around an electric track inclosing the electric word, "Garage," will stand out like a landmark. That landmark leads trade to your door and the more conspicuous and attractive and unusual the landmark is, the more trade it will bring.

Advice to Ford Owners in Box of Cork Inserts

On the theory that an ounce of suggestion is better than a pound of explanation, the following advice on how to get longer wear out of transmission linings is put in with each box of cork insert transmission linings for Fords, under the title "How to Get Longer Wear Out of Your Transmission Linings":

"Every Ford owner wants to get the very longest and best service possible out of his transmission bands because of the expense and bother in making a change. Here are a few practical suggestions for lengthening the life of transmission linings. It will pay every mechanic and Ford owner to read, heed and keep these suggestions for future reference.

"Next time you adjust the transmission bands on your Ford, notice the difference between the expansion and contraction of the band. You will be interested and doubtless surprised to find that the interval is so small that there is only about 1/16 of an inch contraction around the circle of the band. This fact has an important bearing on the successful operation of transmission bands, whether they are cork insert or some other type. The bands, when new lining is first installed,

should be left loose—loose enough to permit the pedals to go well forward and the engine to turn over by hand very easily. Then, after a few days' driving, when the lining becomes set, the bands should be tightened up a very little at a time, perhaps only one turn on the adjustment nuts.

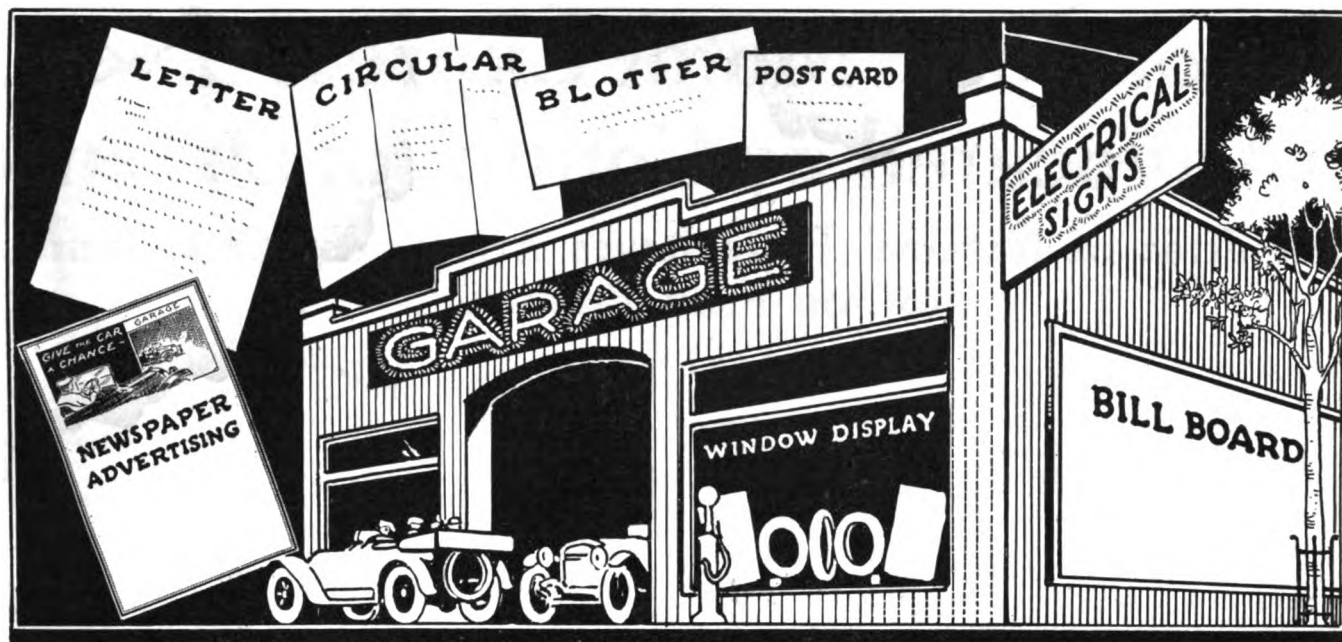
"If the bands are put on too tight, the lining is in constant friction with the drum. This makes the engine hard to turn over by hand because of the dragging action, and in nearly all cases will burn the face of the lining so that it never after can give satisfactory service. Cork insert transmission lining will outwear three sets of the ordinary lining if the bands are properly adjusted, but it is possible to burn up any set of Ford linings. It is all made of cotton and if improperly used, can be so charred that it will disintegrate. The use of corks has nothing to do with this action. Cork will not char any more easily than the fabric, and makes the lining wear very much longer, as well as giving smoother, more positive action.

"If each mechanic and Ford owner will use a little care when the lining is first put into use and be careful not to get the bands too tight when adjustments are made, and if he will tighten them only a little at a time, the lining will break into service smoothly and wear much longer than otherwise. There is one other leading cause for burning up Ford lining. That is allowing the oil to get too low in the crank case. This should be carefully watched, as lack of oil will not only burn out the lining, but sometimes the bearings also.

"If the mechanic or owner will observe these two fundamental rules—keep oil in the crank case, and keep the bands as loose as consistent with satisfactory use, a much longer service will be secured. By exercising this reasonable care, as high as 50,000 miles may be obtained with one set of cork insert transmission linings."

The garageman or automobile dealer who succeeds in business must be first of all, a man who can THINK, REASON and PLAN.

Whatever helps YOU to do broader thinking will return money-dividends just as certainly as failure will come from ignorance and narrowness.



Let YOUR TRADE Know That You're on Earth

Let YOUR TRADE know you're on earth.

Don't continue to hide your business under a bushel basket! Buck up! Courage! Turn on the juice—flood your business with sunshine—nothing thrives like OPTIMISM.

If you quit before you get started, you'll never finish.

Don't be afraid to do something different, or something better—discard fear for nerve.

In an eastern city there was a doctor who had become famous as a specialist. But as he got older he had the tendency to slow up. Many of us do. Later he stopped altogether when he got to be sixty years of age.

But idleness caused trouble. He fell to pieces and his friends doomed him to die. When he was almost ready to "cash in"—he heard that his hospital, which had been his life's pride, was being mis-managed, and this news, instead of having an adverse effect, had just the reverse of renewing his younger-day enthusiasm and pep. He got up and got back to "let his friends know that he was on earth." His business was saved, and he was saved. He died when he was eighty-two.

There are some garagemen and automobile dealers who imagine that they're 100 per cent efficient, or as close thereto as possible—but did you honestly ever give YOURSELF and YOUR business a close-up analytical inspection?

Let YOUR trade know you're on earth!

Your customers and prospects all about you can be reached in more ways than one. *Stop and think!* Let THINK be the best thing you can do. Think up little stunts and ideas to get business—then get the business. Men who are not afraid to let others know that they're on earth, invariably encourage others to do business with them.

Originality is Admired.

Your prospects will admire your originality—your "stick-to-it-ive-ness"—your push—your courage! Make up your mind that you want YOUR PLACE to be regarded as the best and busiest place in YOUR TOWN. Then be it!

Don't be afraid to spend a little money to brighten up the corners of your business. When the local newspaper man solicits you for an advertisement, don't tell him that you're out

of gas! Instead of excuses, spend money! *Every dollar you judiciously spend on "business promotion" will roll back to you with several more dollars added.*

If the store, or the garage needs a coat of paint, give it a coat of paint. Nothing leads to good business so much as neatness. **DON'T LOOK POVERTY — LOOK PROSPERITY!**

The postman is a good natured fellow, and he charges you nothing for all the work he does, and is willing to do. Are you making the proper use of YOUR postman? Is he delivering timely little sales messages to your prospects?

Possibly you may be a grumbler, and begrudge the other fellow's popularity. There's a reason, perhaps, why he is successful. That same reason applies to you.

Let YOUR trade know you're on earth!

No Yale lock can shut you out if you possess the right key—if you will properly boost your business, and faithfully serve your customers, you will be astonished to discern that there is no limitation to YOUR opportunities.

Use of Rural Motor Express Lines Advocated by Council of Defense

Committee of National Body Issues Appeal for Establishment to Aid Food Production

An appeal for the organization of rural motor express lines has been issued from Washington by the Highways Transport Committee of the Council of National Defense. It reads in part as follows:

The Need.

The transportation burden on the railroads and highways of the country has been tremendously increased by the war. There is a larger load to be carried, of manufactured goods, raw materials, and foodstuffs. Not only has production of manufactures, raw materials, and farm products increased, but it is now necessary to transport a much larger proportion of these goods over long distances.

The burden is further increased by the fact that we have removed across the sea, 3,000 miles away, a considerable part of our population, which must be provisioned and maintained. These men were in our army camps last winter. This year there are other men in these camps, and we must handle goods and foodstuffs not only to these 30 new cities but to a great population 3,000 miles away.

It is absolutely necessary to utilize our facilities to the maximum and to extend the use of the highways by the more efficient use of motor vehicles which can operate independent of fixed lines or terminals where congestion of traffic is likely to occur. The motor truck can help the railroad by reducing the short-haul load, and also act as a feeder line in sections far removed from market.

Added to the increased loads of goods to be transported is the fact that man power must be conserved. Heretofore the farmer has done his own hauling to market, but adoption of the rural motor express will enable him to delegate his hauling and to devote his own time to farm operations. An enormous waste of time and labor of both men and teams can be prevented by consolidating the small loads from a number of farms into a single load to be carried by a motor truck.

In many localities local food supplies are in need of development. A better use must be made of agricultural lands in the immediate vicinity of population centers. It improves the business of the local community and adds to the total food supply of the country. The improvement of marketing facilities through the opening of regular daily traffic to market centers

and shipping points is a most effective agency in encouraging food production.

We have, therefore, three outstanding facts that demand especial attention be given to the increased use of the highways for rural transportation:

1. The increased volume of foodstuffs to be hauled.
2. The need for more labor on farms.
3. The need to encourage local food production.

The Purpose of Rural Motor Express.

The motor truck has demonstrated its adaptability to the hauling of farm products. It is dependable wherever the roads are capable of carrying its load. The use of the motor truck for farm transport is growing rapidly and in the vicinity of many cities regular routes are now maintained. The purpose of the organization of rural express on a national scale is to bring to agricultural communities throughout the country an understanding of the greater benefits to be derived from regular daily service over the main highways from farm to city and from city to farm.

By "Rural Motor Express" is meant the use of the motor truck in regular daily service, over a fixed route, with a definite schedule of stops and charges, gathering farm produce, milk, live stock, eggs, etc., and delivering them to the city dealer and on the return trip carrying merchandise, machinery, supplies, etc., for farmers and others along the route. This service amounts to a collection and delivery that comes to the farmer's door with the same regularity that the trolley car passes over its tracks.

Plan of Organization.

The Council of National Defense adopted the following resolution on March 14, 1918:

"The Council of National Defense approves the widest possible use of the motor truck as a transportation agency, and requests the State Councils of Defense and other state authorities to take all necessary steps to facilitate such means of transportation, removing any regulations that tend to restrict and discourage such use."

The highways transport committee of the Council of National Defense is charged to carry out the purpose of this resolution. The several state councils of defense have been asked to appoint highways transport committees, or to delegate the organiza-

tion of rural express to some committee which will have charge of the development of the work within the state. These state committees will in turn further the work through local organizations.

Present Development of Rural Express.

The rural express is in successful operation in the vicinity of many of the larger cities. The development of this system of transportation has been particularly rapid in Maryland and a survey of existing routes in this state has been made by the highways transport committee and shows the general possibilities of the idea.

A detailed survey was made of 22 routes, leading from agricultural sections into Baltimore, Md., and Washington, D. C. On these routes 30 trucks were found in operation; the total capacity of these trucks was 73 tons; the mileage traversed daily was 1,574 miles; the average length of the routes was about 50 miles for the round trip. Most of these routes are operated by truck owners living at the outer terminal, making daily round trips into the marketing center. Many of these routes are operated by farmers who first learned the advantages of motor-truck transportation by using trucks for their individual needs.

These lines have been developed on a sane, practical basis without any special promotion or encouragement from any state or national organization. The trucks start at a small town, gather the produce of farmers and merchants along the road to the city; deliver it at the market, secure a return load from city merchants, including orders by farmers, and return to the country terminal, delivering the orders along the route. These lines have developed chiefly on the roads of the state road system where the condition of the roads facilitates the use of trucks. Many farmers living short distances away from the rural express route bring their milk and produce to a point on this route with horse-drawn buggies and wagons and these constitute feeders to the lines.

A preliminary survey for the state of California has been made, showing an extensive use of motor trucks for passenger, freight and express hauling throughout that state. Over 136 separate lines were found; some traversing routes as long as 125 miles on daily trips. Large quantities of farm produce are handled, and charges are made according to published rates.

The excellent highways of California made it possible for these lines to develop rapidly.

The detailed survey among patrons of a number of these routes discovers the fact that there are three great economic advantages in this method of transportation:

1. Food production is stimulated since the regular outlet to market encourages many farmers to expand production which they would not be justified in doing if they were obliged to transport their own produce to market.

2. Shortage of labor is greatly offset from the fact that the system leaves the farmer on the farm and his time is not consumed in trips to market.

3. There is immediate improvement in the efficiency of the farm since supplies, machinery, and repairs can be secured promptly from city distributors of fertilizers and farm machinery.

From the national standpoint these routes aid in several ways:

1. They relieve the railroads of local freight which permits carload lots of materials and foodstuffs from distant points to enter the terminals.

2. They help to avoid the necessity for local freight embargoes.

The need for the system of carrying goods to market without requiring men and teams is generally recognized by farmers and where production of the individual farmer has justified the purchase of a motor truck, the adoption has been very rapid during the past few years. On many farms, however, the quantity of production is not sufficient to justify the investment in a truck by the individual farmer if he must maintain his teams for farm power. The use of the rural express with its greater speed enables the farmer to operate the same or an increased acreage with fewer horses, making more land available for food production which was previously needed to grow grain and hay for teams. In many instances, the introduction of rural express has enabled farmers to engage in the production of milk which requires daily marketing.

The rural express greatly aids the country merchants in carrying more complete stocks of goods; in filling special orders promptly, and in avoiding temporary shortage of staples due to delayed shipments of embargoes on the railroad. In many instances the country merchants have reported that their business has been greatly improved because of the daily delivery service from wholesale centers.

Expansion to National System.

The success of existing lines of rural express is convincing evidence that the expansion of the system is an immediate necessity, both for its value in meeting the present emergency and as a means of permanently improving rural transportation. What has already developed becomes an integral part of our national transportation system.

The present strain on our transportation facilities has emphasized our need for improved means of internal communication not only between cities, but also reaching out into every agricultural community.

The rural motor express is not, however, a development to meet an emergency only, but rather an expansion of transportation facilities to meet the growing demands, to bring the consumer in closer touch with the producer; to relieve the producer of the burden of marketing his produce and permit him to remain on the land where his labor is of highest value to the community.

Organization of New Routes.

The state highways transport committees are organizing local committees in all communities where there appears to be the need for improved rural transportation. The local committee first secures co-operation of the local press and leading organizations interested in transportation and food supplies. Among the various groups who might be interested are the following: Chambers of commerce, boards of trade, merchants' associations, local food administrators, farmers' clubs, county agricultural agents, dealers in farm implements, feed, fertilizers, grain, and other farm produce.

Meetings of the representatives of these organizations are held to explain the plan of rural express and to make general survey of local needs. Among the facts that are brought out at such meetings are the following:

1. Experience of existing motor-truck lines in the locality.
2. Instances of localities now lacking such facilities.
3. Conditions of highways in such localities.
4. Labor shortage among farmers.
5. Transportation facilities of country merchants from wholesale centers.

After a general survey of the country or district has been made the local committee conducts an intensive survey by means of mailed questionnaires or personal visits among farms and merchants along route of prospective lines. Lists of names of farmers and merchants are secured through county agricultural agents or their local organizations.

When the desirability of establishing a new route for a certain section has been determined the committee proceeds to consult owners of trucks, farmers, and other private owners to locate a man to establish the route. Questions of scale of charges, the schedule of the trips, character of produce to be carried, etc., are worked out by the committee on the basis of experience of existing lines in the same community, or other lines which have been surveyed by the state committee.

Detailed suggestions on conducting these local surveys, methods of making surveys through questionnaires, questions concern-

ing roads, charges, etc., will be furnished by the highways transport committee of the Council of National Defense through the state committees. The plan of organization is to adapt the service as perfectly as possible to local requirements, utilizing at the same time the experience of communities throughout the country as gathered by state and national committees.

Flexlume Signs Liked by Motor Tradesmen

The automobile trade has a liking for people who specialize. The trend is unmistakably away from the general lines toward the manufacturers who select a particular line of business and plan to meet its needs.

That is one reason why you see so many of those electric signs with solid outlined raised white glass letters on a dark background at the front of motor vehicle sales agencies and garages—the Flexlume Sign Company, Buffalo, N. Y., has been specializing on filling the needs of the automobile business.

The letters of raised snow-white glass, which is the distinguishing mark of the Flexlume Oplex sign, are made by a patented process. They are particularly suited to the needs of organizations which are seeking to gain the good will of people of refined taste, for the strength in restraint of these solid letters of light suggests "quality" in every line. Added to this they have the advantage of being strong attention pulling day signs as well as night signs, for the solid raised white letters on a dark background form a day-time combination which it would be hard to improve upon.

As a result of the special attention the company has devoted to the needs of the automobile field it has hundreds of designs to satisfy needs of all kinds. Almost all the well known trade names have been reproduced in the Oplex characters with their own distinctive form of lettering retained. Some of these are shown in a little book, "Twenty-four Hours a Day," which the company will gladly send upon request.

It might also be noted as of special interest to sales agencies, which sometime change the make of cars they handle, that the makers of Flexlume signs have perfected an interchangeable type of sign having movable letters. With one of these signs you can change the make of car you handle and in a few minutes change the sign as well, simply by taking out the old set of letters and replacing it with the new name.

A lot of Eastern men go West and Western men come East. They change localities, but it never dawns upon them that they might better change the gearing and belting of their brain machinery.

Send in Your Advertisement— It May Win Some More Money

Advertising that has been done by motor tradesmen with success in one part of the country can generally be used as a model for the getting of profits by fellow craftsmen in other places. It is to promote such an exchange of ideas and experiences that we have arranged our advertising contest.

Cash prizes amounting to \$50 are offered to readers of the AMERICAN GARAGE & AUTO DEALER. First award will be \$25, the second prize will be \$15 and \$10 will be given for the third best advertisement submitted. The decision will be left to men with a wide knowledge of advertising and especially of the best advertising in the automobile business.

It is not our purpose to consider in this contest the large space copy such as that which is prepared by highly trained writers in great advertising agencies. What we want are the two, or three, maybe four, column "ads" that the busy garageman, passenger car agent, tractor and truck seller and accessory dealer has gotten up for use in the newspaper—daily or weekly—of his own small but representative American city or town.

Even though one of the brisk business men mentioned may have had little or much assistance from his printer or a newspaper man that is no reason why he should not send his advertisement along to us. It may win one of the contest prizes. Try it and see.

Any and all branches of the motor vehicle business are eligible for the competition. The man who paid for the insertion of the advertisement may have wished to sell tractors, passenger cars, trucks, trailers, accessories or tires, that makes no difference. Whether he sells one or all of the lines mentioned should only provide more opportunities for the display of advertising skill.

When you send in your advertise-

ments for the competition tell us how you arrange your advertising appropriation. Let us know if you have an electric sign, do you use billboards, and have you tried putting the same advertisement in different newspapers? Are morning or afternoon, or daily or weekly papers best in bringing customers into your place of business? Have you been in the habit of running the same advertisement more than once in the same paper? What size of advertisement has proved best to sell cars, trucks, accessories, tires, garage and repair service?

\$50 in cash prizes

\$25 - First prize
\$15 - Second prize
\$10 - Third prize

**Are you going to win one
of these rewards?**

The one feature of your advertising experiences that we are most interested in is how many new customers and how much profit did YOUR best advertisement bring to you? Tell us in dollars and cents what the net result was to your business, profit is perhaps the best test of the worth of an advertisement. Of course, when a certain advertisement has helped to bring new buyers to you who did not buy at once, the fact remains that the profits you collected from later sales were none the less due to the advertisement run long ago.

Six weeks remain in which to send in candidates for the prizes as the

contest closes August 1, 1918. The names of the prize winners, as the judges select them, will be given in the AMERICAN GARAGE & AUTO DEALER in September.

Send in your advertisement now. Do not delay. Do not permit the bigness or smallness of your town or the size of the advertisement to make any difference but **DO IT NOW**. Send the advertisement to the AMERICAN GARAGE & AUTO DEALER, 116 S. Michigan avenue, Chicago.

Harper Uses Novel Plan to Stimulate Car Sales

One of the most novel sales contests ever staged was conducted recently in Philadelphia by H. B. Harper, distributor for Willys-Knight and Overland cars. The contest, which was participated in by all retail salesmen of the Overland-Harper Company, took the form of a poker game.



H. B. Harper.

Each different model was given a playing card designation, and each sale dealt a salesman-player a card. A sale of a Willys-Knight limousine, for instance, gave the player an "ace," the light four Overland touring car, the lowest priced car in the list, counting as a "deuce." Five sales, a full hand, was necessary before a player could "sit in." Bonuses were paid for all poker hands. The novelty of the contest, as well as the generous bonuses offered, proved a good stimulus to sales.

Fix a Window Display, Kodak It, Send Picture for Reproduction

One Kodak Film + a Few Minutes' Time = \$5.

The way to get \$5 is very simple. Just devote a little time to dressing up one of the windows of your store or garage with some of the goods you are selling. After the window has been fixed up, and some of the most effective window displays are the simplest and easiest arranged, have a Kodak photograph taken.

Send the print along to us with an account of how you fixed up the window and tell us how much business resulted from the display. For every photograph which is accepted for publication, the American Garage & Auto Dealer will gladly pay \$5. All of the photographs received will be returned to the senders, whether or not they are found suitable for publication.

Most every motor tradesman has one or more windows that, as the boys say, "Are not working," and we hope to help put a good many of these idlers at the job of earning profits for their owners. But we must have the help of the men that control the windows.

Many of the manufacturers of the numerous accessories carried by motor tradesmen have window dressing departments that will be happy to make suggestions regarding methods of fixing up displays that will help sell goods. Cut-out cards, printed signs and other material that can be used to advantage in capturing the dollars of those who pass in front of your store are furnished by quite a few of the jobbers and manufacturers of accessories. Put these cards to work increasing your profits from accessory sales.

It is not necessary to go to a lot of trouble and expense dressing a window. While the big stores in large cities have regular salaried window trimmers the motor tradesman can make good use of his own ideas, added to a little time spent in arranging his display, and make comparatively as

much profit from his windows as the great city merchants and department store companies.

When you have taken the photograph, wrap the print in cardboard or heavy corrugated paper. It is best not to fold the print, as photographic paper often cracks when rolled or folded. Lay the print flat and use the cardboard to prevent its being damaged in the mails.

Address the photograph and the letter of description to the American Garage & Auto Dealer, 116 S. Michigan avenue, Chicago, Ill. Every picture that can be used will bring \$5 to the sender and all photographs will be sent back to the owners. We wish particularly to get pictures from motor tradesmen in the smaller cities and towns.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

ELGIN PRICES RAISED.

A. L. Chambers, advertising manager of the Elgin Motor Car Corporation, Chicago, announces an increase in price of some of the Elgin models. The raise is from \$1,095 to \$1,165, f. o. b. Chicago, for the five-passenger touring car and the four-passenger roadster.

It isn't the space used in advertising that brings returns, but the brains YOU put into that space.

Norwesco Displays Help Dealers Sell More Goods

Norwesco displays are designed to do just one thing—to help the dealer sell more Norwesco utilities. Each display holds a filled can of Se-ment-ol, the original self-acting radiator cement; Skalex, radiator cleaner; Norwesco mohair dressing and lining dye; Norwesco utility black, air drying enamel; Norwesco leather, Pantasote top and upholstery dressing; and Norwesco valve grinding compound.



The displays are lithographed in six colors. Behind the filled cans printed on the background is an actual reproduction of each can. In this way the goods are always displayed even after the filled cans are sold.

On both sides of the chemist figure in the circle a pocket is provided holding fifty 8-page folders, "Longer Life for Your Car." These folders thoroughly describe the Big Six Norwesco utilities. The most natural thing in the world for the waiting customer to do is examine the different utilities. They are all removable. The descriptions are easily read and the prices are plainly marked on the literature that accompanies each display. The display is always there and always ready. The customer can sell himself about as easy as a tradesman can sell him.

In the window they are a real sales force—a force that not only attracts the passing motorist, but brings him into the store to buy. The combined effect of Norwesco counter sets and window displays gives a sales pulling power that should not be overlooked. They are silent salesmen and make the store the connecting link between the motorist and Norwesco products.

The readers of AMERICAN GARAGE AND AUTO DEALER can secure these displays by writing the Northwestern Chemical Company, Marietta, Ohio.

How to Make the Shop Pay

Service Agreement Not Considered Satisfactory, So Bill Arranges for Financial Backing of Another Plan

The affair dragged along for a few days. The managers were all enthusiastic on the surface but there seemed to be an undercurrent of unrest and uncertainty. They, like Mr. Brown, felt that the agreement was not binding enough and that some means should be employed to force the various members of the association as they now called it, to keep to the agreement.

Mr. Brown worried more than any one else. He had been the leader in bringing matters this far. He felt that if he could finally close the deal and get the new arrangement working, he could call it a good job and turn his attention to other matters.

Mr. Wilton, with his usual optimism and enthusiasm, was all for closing the deal at once and getting on the new basis. Mr. Brown's attitude irritated him and he could see no cause for the delay. Mr. Brown, however, held off. Several of the members had voiced the same opinions as his own and he knew that if the deal went through they would all be suspicious of each other and that at the first indication of a violation they would all consider the deal off.

It looked very much as though Bill's idea, while good theoretically, would not work out in practice. Mr. Brown had questioned Bill several times about the hint he had dropped on the night the final agreement had been reached, but he might as well have questioned the moon. Bill would only say that he was working on a scheme and did not think it would work out well and that it was too big anyway.

Bill Surprises Mr. Brown

Mr. Brown had given up hope of ever learning what his idea was when Bill called him over the telephone and asked him to come down to the shop one night. When he arrived, he found Bill alone and very restless. Mr. Brown was anxious to hear what he had to say and get back home, but Bill kept delaying and finally said that he was waiting for another party to join them. It was a surprise for Mr. Brown when the others arrived, but it seemed to be a relief to Bill. He acted as though he feared they might not come.

The new arrivals were the leading banker in the city, a man well known for his courage in financially backing new enterprises; a prominent corporation lawyer and a well known consulting engineer from a nearby city. Mr. Brown had met the banker and lawyer but the engineer was a stranger to him. Bill brought up

the business that had brought them together first.

"Mr. Brown," he said, "I may not have played quite fair with you. Even before I spoke of the dealers' agreement that night at the meeting, I had talked with Mr. Bronson, the banker, and he seemed willing to help me finance the deal I have in mind. He told me not to say anything to you until he was ready and if I am not mistaken he planted some seeds of distrust in the minds of your managers. In fact, I think you may blame him for your own suspicions. Think back and see if you did not get the first idea that those fellows would not stick to their agreement from him."

Mr. Brown tried to remember but could only recall the fact that he had several chats with the banker when they happened to meet walking the same way. He admitted, however, that such a thing was possible.

Want Help in Organizing.

"Well," continued Bill, "it doesn't make any difference anyway. Will you tell Mr. Brown all about it now, Mr. Bronson? You know we want his help in organizing."

The banker nodded and said:

"The plan is this, Mr. Brown: Some time ago Bill came to me with his shop books and showed me what had been done with his shop since you took hold of it. He had an idea that if he could enlarge and develop he could build it into a good thing. I have known Bill for a few years and thought he was a good mechanic but nothing more. He has evidently absorbed some of your ideas and perhaps improved on a few of them.

"At any rate, in half an hour he had me almost as much worked up as he was. It was a new game to me though and I put him off until I could get advice. I sent for the best consulting engineer I knew of—one who was familiar with doing such things as we were planning to do. I also took good legal advice as to how to organize. The engineer told me the plan was entirely feasible. The lawyer has worked out the legal details and the organization. In the meantime, you and Mr. Wilton have been busy getting our business ready for us. In other words, you have been selling our product without knowing it. I think that there is now no risk in floating our little venture."

"None at all as I see it," said the engineer. "I only wish I had the opportunity to put the same kind of a deal across. It is new but it will go strong."

"Perhaps," said Mr. Brown, who did not much like this slow and deliberate way of telling things, "if you would explain to me just what you intend to do I will get as enthusiastic as yourselves. Just at present I am rather in the dark."

"Bill will explain to you," said the banker. "I would like to have him go over the details again myself," and Bill began.

Boulcott Is New Delco Advertising Manager

W. C. Boulcott has been made advertising manager of the Dayton Engineering Laboratories Company. This is the third connection Mr. Boulcott has had with the Delco organization. Early in his business career he was a special service representative. Later he was recalled as assistant service manager.

In the latter position Mr. Boulcott's record caused him to be selected as manager of the Chicago branch of the United Motors Service. A few months ago he left



W. C. Boulcott.

the United Motors Service to join the Cadillac Motor Car Company organization and from this connection he returns to the Delco ranks as advertising manager.

Mr. Boulcott's experience both in the service field and in the sales departments of these organizations has fitted him admirably to take up the work in the advertising department.

"Self Trust is the first secret of success."—Emerson.

EDITORIAL REMARKS

Help Organize and Run Rural Motor Express Lines

The Council of National Defense, through its highways transport committee, has sent out from Washington a country-wide appeal for the promotion of rural motor express lines. The stated purpose of these lines is "to conserve foodstuffs and labor and to supply rural transportation."

Because of their knowledge of motor vehicles and their experience in handling them in the mechanical sense; garagemen, automobile agents and accessory dealers as a class are best fitted to help organize and run rural motor express lines. While it may be that there will be little immediate financial benefit for motor tradesmen in such efforts the ultimate good to be derived from the successful establishment of these lines is certain to benefit the communities served by them. In these benefits the motor tradesmen will have a large share, both as regards profits from sales of vehicles and accessories and from the advertising which their business will derive from the work done by the truck lines.

The attitude of the Council of National Defense as to motor trucks is shown by a resolution passed by that body which read as follows:

"The Council of National Defense approves the widest possible use of the motor truck as a transportation agency, and requests the State Council of Defense and other State authorities to take the necessary steps to facilitate such means of transportation, removing any regulations that tend to restrict and discourage such use."

On another page of this issue the plan as outlined by the highways transport committee is given in detail. Further information can be obtained from the AMERICAN GARAGE & AUTO DEALER or from the Highways Transport Committee, Munsey Bldg., Washington, D. C.

How Big We Are

Mr. Garage Man and Automobile Dealer, you are a part of a great industry!

President Willys of the Willys-Overland Co. says: "There are 4,000,000 passenger automobiles in this country, traveling 40,000,000 miles daily, equivalent to 1,600 times round the earth, and these automobiles could move 20,000,000 people—one-fifth of our population—comfortably seated, 100 miles a day with one filling of gasoline."

Are you living up to your opportunities in this mammoth business? Are you getting your share of the patronage? If not, sit down and think why you are not. If you can think without sitting down, do it on your feet, for then you will lose less time getting started to mend

the situation. Bear in mind that you are a part of one of the greatest industries in this the greatest business country of the world. "Brighten up your corner," as Bille Sunday's favorite song goes, and get your share of trade.

After the War

"The question asked me by business men a dozen times a day is: 'How about business after the war?'" said a Chicago banker recently.

"What's the answer?" he was asked.

"Depends on the particular business," was the response.

"Take the automobile business, for example," was suggested.

"Well," said the man of finance slowly, "I don't see how the automobile and automobile accessory and supply business can help being very good after the war. The government has limited the output of passenger motor car manufacturers by reducing the supply of materials allotted to them. Furthermore, the general practice of economy and thrift among our people has led many to postpone buying new cars and decide to worry along with their old ones.

"The old ones will need more or less repairing, of course, and that will call for an unusual amount of accessories and labor in the meantime. What will be the consequence when the war ends? It will be natural for people, who will be jubilant over the cessation of war, to be unusually liberal in expenditures. We all know how a man who has emerged from a terrible ordeal is inclined to cut loose and spend his money. It is human nature.

"Besides, at that time there will be thousands of families with savings tied up in Liberty bonds that never knew before what it meant to have a dollar ahead. Relieve the pressure, and much of that money is sure to find its way into circulation. We all know the tendency of our people to invest in a car whenever possible. With these facts in mind it is not hard to foresee a marvelous demand for automobiles when the war ends. Another thing: Those who run their old cars until after the war will find them worn out, and they will not postpone getting a new one any longer. It looks to me, therefore, as though the automobile industry should experience a tremendous revival as soon as indications point to a conclusion of the war."

Women in the Automobile Business

While it is hoped that the time will never come when it will be necessary for women to be drafted into business in this country to the same extent that they have

been in France and Great Britain, it is still a fact that there is a very big opportunity for women in the motor vehicle field. From different parts of the country reports have come that women are selling passenger cars. Not only can a woman sell passenger cars when they are demonstrated by a man driver, but a good many members of the fair sex have had so much experience in driving that they can give quite as good demonstrations as skilled male pilots.

There is little question that the sales knowledge and ability possessed by a good many of the women clerks in stores all over the country could be diverted into the motor car field. For one thing it is variously estimated that women have either the deciding vote or are consulted in from sixty to eighty per cent of the sales of new automobiles. With this in mind it is not difficult to figure that women should make good merchandisers of passenger automobiles.

So far as the smaller cities and country towns go there is no reason why women, who have acquired an extensive mechanical knowledge from driving passenger cars, should not be able to sell motor trucks and tractors. There is not any greater quantity of strength required from one who drives trucks or tractors than from the pilot of a passenger car. So with the thinning out of the ranks of salesmen who go into the different branches of the national service it seems safe to predict that women will fill many of the places that would otherwise be left vacant.

A Duty of Motor Tradesmen

Motor tradesmen can perform a real service to their country, their customers and themselves by doing everything possible to keep in good running conditions the limited number of new passenger cars they can get to sell this year. This of course also applies to cars of all of the other previous years in which they were in the automobile business. One way in which this duty can be performed will be to impress upon the users of cars the necessity of careful lubrication and regular inspection and adjustment of such parts of the mechanism that need it.

One of the keenest observers of automobile affairs in this country—a manufacturer of automobile parts and machines used in automobile making and repairing—express the belief that the American public will be more careful in its buying of cars after we have won the war than it has been in the past. He believes that the durability, in other words, the service in mileage given, of the cars now in use will have a great deal to do with future sales. He is of the opinion that whenever cars are sold the dealers should take particular pains to instruct the owner, and any and all members of the owner's family who are likely to drive the car, very thoroughly in the most approved methods of its operation.

While such a policy would be a good one to carry out in normal times it is a most imperative duty on the part of the members of the automobile selling fraternity to perform in these days.

Makers National Body Aids Rural Motor Express Lines Truck Committee Appoints District Representatives to Survey Routes and Help Establish Service

District representatives are being appointed in all the principal centers by the National Motor Truck Committee of the National Automobile Chamber of Commerce to assist in the discovery of routes over which rural motor express lines can be operated successfully and to help in getting such services started.

The committee has issued pamphlets giving a list of services to be rendered by such express lines, the scale of charges, a sample cost sheet, suggestions for the preliminary survey of routes and canvass of prospective customers, operating plans and general suggestions. This printed matter will be sent upon request addressed to the N. A. C. C., 7 East 42d Street, New York.

The committee has undertaken to interest the 115 motor vehicle manufacturing members of the Chamber and between 30,000 and 40,000 dealers in this patriotic movement. In this work it is aiding the Highways Transport Committee of the Council of National Defense, as a result of whose investigations and efforts rural

motor express lines will be in extensive operation before the summer ends.

The object is to provide a regular service, reliable in operation and reasonable in cost, for the farmer, who is affected by embargoes or inadequate railroad service or is so far from a railroad that hauling is unprofitable.

Farmers now served by motor express lines regard them as the greatest labor saver they have ever known and say that without the trucks they would have to stop shipping milk or garden truck, that their production has largely increased and that their produce is delivered quicker and in better condition than ever before. Many who formerly wasted material because it did not pay them to drive to town now make regular shipments.

Truck lines usually can be operated most successfully between two towns or a city and town 20 to 30 miles apart, carrying farmers' produce to the towns and bringing back merchandise to the farmers, the whole operation being carried through in a day.

TRUCKS MOVE FLEET CORPORATION

Long-distance moving by motor truck, whose advantages have long been familiar to the private householder, demonstrated its advantages to the Government recently when the Emergency Fleet Corporation removed its offices by motor truck from Washington to Philadelphia with the loss of only one working day. Sixty trucks were used, making four round trips between the close of business Friday in Washington and resumption of work in Philadelphia the following Monday morning. The furniture and records of the corporation were scattered in thirty-nine different buildings in the capital, where thousands of clerks and stenographers were employed. The office equipment amounted to several hundred tons. On its first trip the truck fleet moved 600 desks, together with filing cabinets, typewriters and chairs.

In March and April, the Secretary of Agriculture, on recommendation of the Office of Public Roads and Rural Engineering, approved 212 State road-building projects, involving more than 2,500 miles of highway under the Federal aid road act. The estimated cost of these improvements to the States is about \$15,000,000. The Federal aid allowed is more than \$5,000,000.



Window Displays Will Sell Tires

Hundreds of simple, yet artistic window displays, may be constructed to exhibit automobile tires and accessories at costs not to exceed \$2.00, according to Raymond Stratton, manager of the window display department of the B. F. Goodrich Rubber Co.

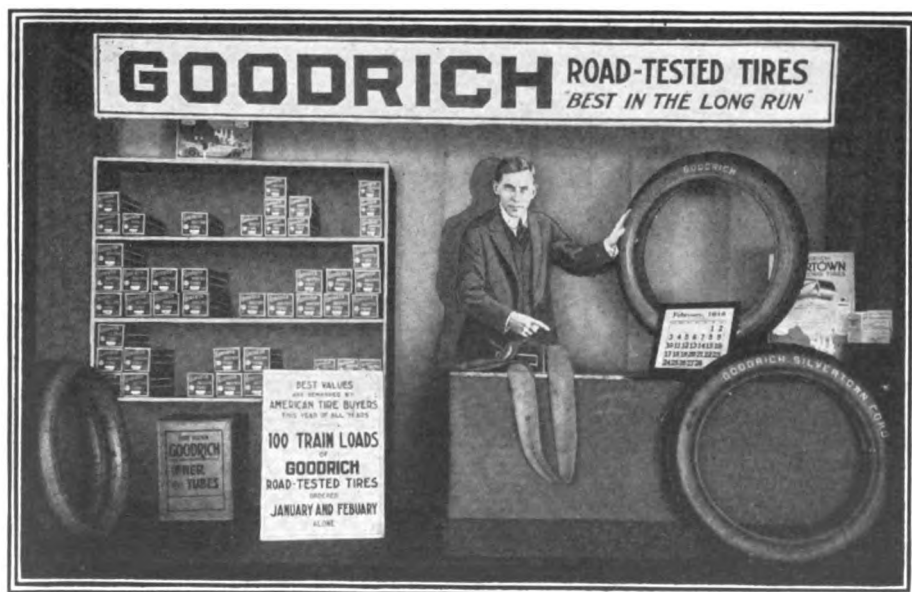
Sales compelling displays are not necessarily the elaborate ones—in fact window display experts agree that the most effective creations are the plain, neat, inexpensive designs.

The Goodrich expert gives some interesting and valuable hints that may be utilized by garage men and tire and accessory dealers.

“One important item of window display is overlooked by the average amateur—that is the background,” said Mr. Stratton. “We find that an attractive permanent background suitable for the average window can be constructed from draped sateen. By connecting four three-foot posts with



Background of draped sateen.

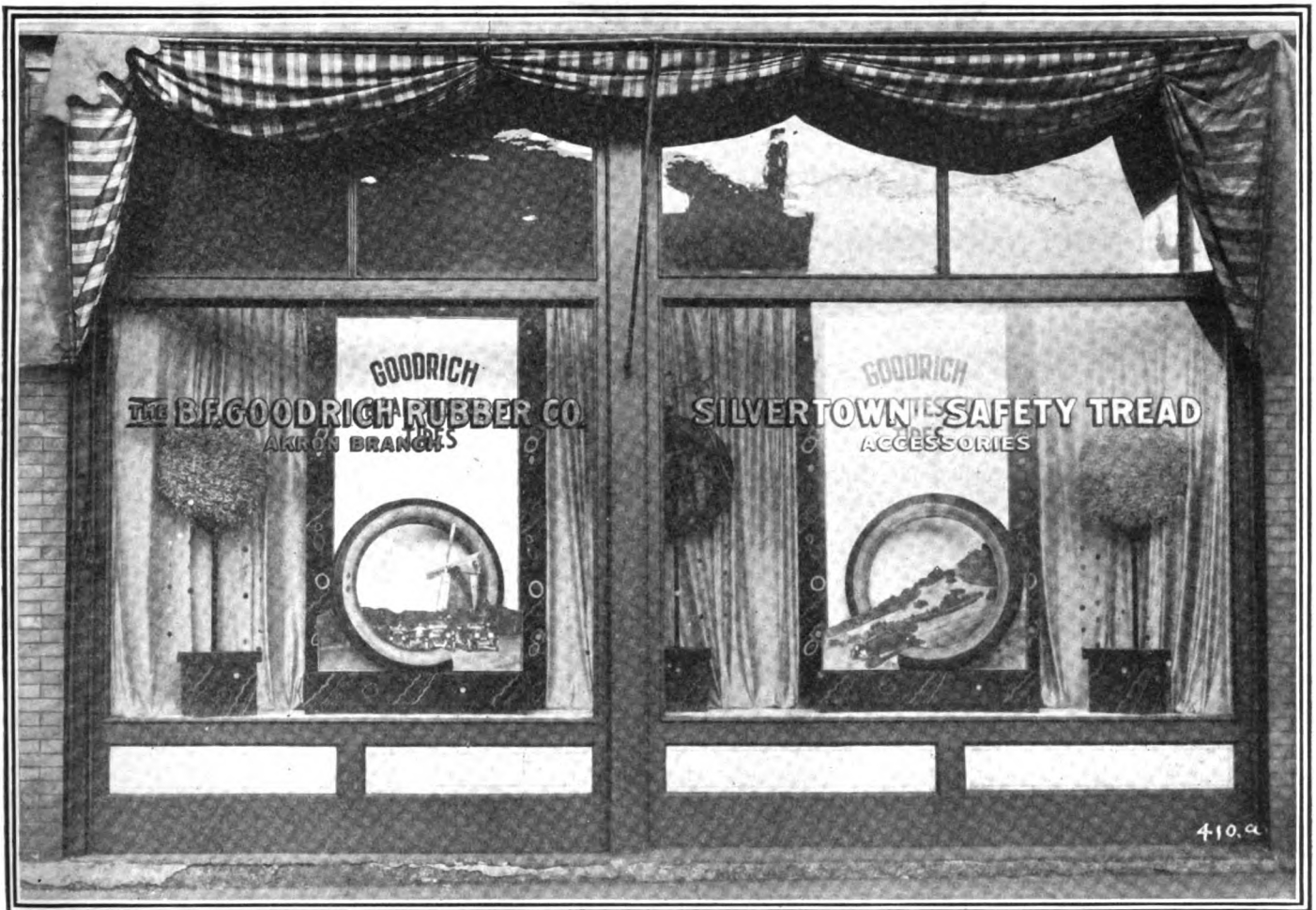


Interior of model tire merchant's store.

ordinary curtain poles and suspending the folds of sateen on brass rings, a neat and effective background is formed. Dark brown, dark green or dark blue are colors that will blend with almost any article to be displayed.

“An indispensable article to display tires is a tire rack or stand. These are not costly and are as essential as the background,” continued Mr. Stratton. “In one of the photographs accompanying this article is shown a simple yet effective display in which tubes, tire talc and a tire were displayed with the addition of but two additional items—crepe paper ribbons and display cards. Both tire rack and background are shown in this window.

“The attractiveness of any window



Photographs of actual windows showing how enlarged pictures were used.

is augmented by neatly lettered display cards which should bear a short message. Great care should be exercised in the wording of the cards. Crepe paper streamers and crepe pa-

per, of varied designs are useful equipment for window decorators. Floors of windows should be covered and paper flooring is practical, attractive and not costly.

"Messages or slogans of not more than four words can be prominently displayed by cardboard letters connected by cord and resting against the window glass. As shown in the 'Road Tested' display the slogan is 'tied up' to the product by means of crepe paper streamers or ribbons.

"One sheet posters or lithographed hangers, furnished by the advertising departments of most tire and accessory houses, may be used in window displays to good advantage. Such a window hooks the merchant up with the big national advertising campaigns of the manufacturers.

"The display pictured herewith, which reproduces the interior of a tire store with the enlarged photograph of the salesman, was designed and installed in Goodrich branch windows. This type of window has strong selling power, but is slightly more expensive than the other pictured here. The life sized enlargement being the item of more than average expense.



Crepe paper provides fine setting.

(Continued on Page 29.)

Tractors and Farm Lighting

New York Food Commission to Demonstrate Tractors

State Director of Production Arranges for Tests to Show Farmers How Machines Work

Calvin J. Huson, director of production of the New York State Food Commission, is arranging to hold a number of farm tractor demonstrations in various sections of the state during the present season. This course has been decided upon in view of the large number of inquiries coming to the commission from farmers as to the merits of the different makes and types of machines.

While the State Food Commission is convinced of the practicability of the more general use of farm tractors for agricultural work in this state to increase food production, it can not recommend any particular make or type of machine.

A farm tractor capable of doing excellent work in one section of the state may not be adapted to another section where soil and other conditions are entirely different. There are now approximately 5,000 farm tractors at work on New York state farms, most of them giving general satisfaction. There are several thousand farmers contemplating the purchase of tractors who are, for the most part, in a state of uncertainty as to the style or type

of machine that may prove best for their use. This is not at all strange in view of the fact that there are on the market more than a hundred different makes of machines.

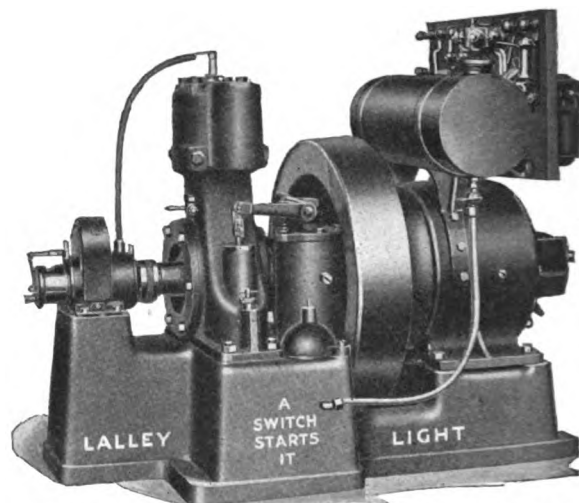
The demonstrations are being planned in order that farmers may see different makes and types of machines in actual operation and judge of their merits for themselves.

These demonstrations are intended to be supplemental to the 20 tractor schools held by the commission during the latter part of the winter and attended by 1,500 farmers who were desirous of learning more in regard to these somewhat complicated and expensive machines.

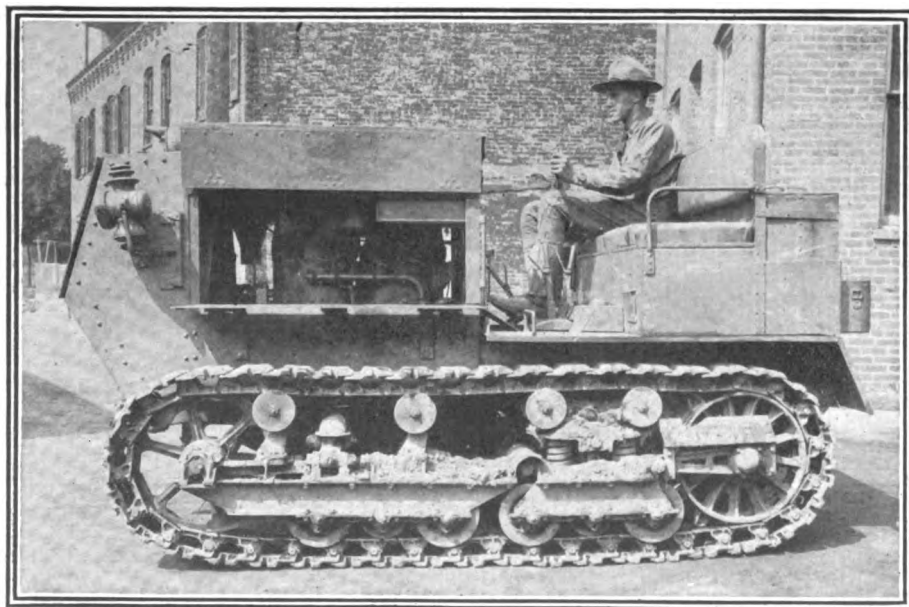
Tractor manufacturers are being invited to co-operate with the commission by exhibiting their machines in actual operation at these dem-

onstrations. The Farm Bureau Managers are being communicated with as to the selection of the most convenient points where the demonstrations shall be held and will be requested to look after the local arrangements for the demonstrations.

It has now come to be pretty well understood in the business world that the idea of service is really at the bottom of all successful selling.



Lailey electro-lighting plant for farms which was described in our April issue.



U. S. ARMY ORDNANCE TRACTOR.

Modern army "mule" which passed a successful test conducted by the Motor Equipment Section, Engineering Bureau, Ordnance Department, in Rock Creek Park, Washington, June 8. The motor develops 54 horsepower, the weight of the tractor is 9,000 pounds, and that of the limber and gun, an additional 10,000 pounds. Hauling the gun, the tractor negotiated the most difficult grade, going through mud and clay a foot deep. It pushed down 3-inch saplings, climbed over tree trunks 2-feet high, nosed down into pits and climbed almost perpendicular banks. It will turn in its own length. It is armored so that the engine, radiator and fuel tank are shrapnel proof.

Requests Tractor Owners to Keep Machines at Work

The U. S. Department of Agriculture has issued the following request:

"Owners of tractors, which are not kept busy through the plowing and seeding season, will perform a patriotic neighborly duty by granting use of these outfits to neighbors, who may be short of labor or hands to prepare seed beds.

"A reasonable rate of hire for the tractor would enable the tractors to make a return during otherwise idle periods, but, most important, will make it possible for others, at reasonable expenditure, to have a full acreage and add to the Nation's important food supplies."

NEW TRAILER DISTRIBUTORS

Arrangements have recently been completed with Gerlinger & Co. of San Francisco to act as factory representatives of the Fruehauf Trailer Company of Detroit. They will have charge of the states of Washington, Oregon, Idaho, Utah, Nevada, California and Arizona. E. E. Gerlinger, president of the company, has been in the motor truck business for many years.

Unabated Advertising and Sales Needed for Industrial Health

Successful Conduct of Business and Intensive Prosecution of War a Problem of Adjustment

By **W. O. RUTHERFORD**

Vice-President

B F Goodrich Rubber Co.

Advertising and advertising effort, sales and sales effort, are just as much a part of our economic fabric as the growing of wheat or potatoes or the manufacture of articles of daily use.

What happened in England is peculiarly instructive. August, 1914, was characterized as the worst trade panic England ever saw. Advertising in the London dailies dropped to less than half the July figures. The public stopped buying and began to hoard money. People wore their shoes to shreds. It was expected that there would be unemployment on the widest scale, and a huge fund was collected to feed the poor. This fund was never needed.

What did England do? She called together her advertising men and made it plain that the industries had to be kept alive. This gospel brought advertising back to its pre-war level.

"That which keeps our business going today," said H. G. Selfridge, London's biggest merchant, "is the fourteen and a half million pounds a week of our national pay roll. It comes out of the bank on Friday, goes over the retailer's counter on Saturday, and back into the banks on Monday. If advertisers wouldn't advertise, people wouldn't spend, and this would mean that this great sum would be impeded, business would slacken, and national prosperity would suffer."

We may well search out the fundamental considerations involved in our business life, and, after making a thorough study of the economies of the situation, I submit the following eight declarations as being fundamental to our business life:

1—Since only 1 per cent of every trade dollar is spent in advertising, our entire national advertising budget cannot, even of itself, be considered extravagance.

2—Advertising speeds up production and reduces the selling expense, thereby making the cost to the user less than would otherwise be the case.

3—The quickest way to help Germany win the war is to close up shop, fail to provide labor, and restrict the circulation of money.

4—We have recently learned the value of the expression, "In time of peace prepare for war." We have yet to learn that

advertising during the war prepares for the commercial war after the military activities are over.

5—America's industrial greatness is due largely to advertising, and failure to advertise, even for a temporary period, will drag our institution downward.

6—Advertising gives us national unity and oneness of purpose. It institutionizes America. Without it we lose the value of the world's greatest trade-mark, "U. S. A."

7—The man who under fire abandons his trade-mark or allows his business to shift for itself is a business slacker who is helping the enemy to win.

8—Just as we need the farmer to grow grain, the engineer to make airplanes, the chemist to make ammunition, we need the advertising man and the salesman to keep the wheels of our industries turning faster than those of any other nation.

Service Biggest Factor in Selling of Tires

Just as "service" has been amazingly developed by progressive automobile dealers who first realized its value as a sales stimulant, so it has made remarkable progress during recent years in the tire end of the industry.

It is conservative to say that probably more stress is placed on service facilities in the tire advertising copy of the various manufacturers today than on any other single item. It is also interesting to note that some of those manufacturers who in the early days scoffed at the elaborate service methods of their competitors are now putting into effect service plans of a most extensive nature. F. C. Millhoff, general sales manager of The Miller Rubber Co., of Akron, bases the success of that company's tire ambition wholly on its service methods.

"Irrespective of the merit of a product, if it is of the kind that is subject to wear and tear some provision should be made for its protection while in use," declares Millhoff. "The manufacturer should not only render that protection to his product in order that he maintain a high standing in the industrial world—a position of dignity and integrity—but he certainly owes it to the consumer."

"The consumer is the manufacturer's best friend. The success of the firm

stands wholly on the attitude that the consumer manifests toward him, and, if the product has merit, and the consumer gets the right kind of service, there never need be fear concerning that consumer's loyalty toward the product.

"We of the Miller Rubber Co. consider our customers our best friends. An example of this is shown in Akron, where 70 per cent of all tires in the world are manufactured. The Miller Co., by no means the largest producer in Akron, sells more tires in that city than any other single company. There is but one reason for the Akron demand for Miller tires, and that is that the Miller Co. was the first to give Akronites a really modern and efficient service station.

"We have endeavored to maintain that leadership in service facilities ever since, with the result that we think it is not so much a question of creating a demand for our product as it is a problem, for us to fill that demand. Prompt, efficient and economical service is in my opinion indispensable from the standpoint of a company that would attain the highest degree of business success."

WINDOW DISPLAYS WILL SELL TIRES

(Continued from Page 27.)

"Another window used in our branches is the one with the enlarged highway photographs inserted in the tires. These two windows are shown as suggestions to those dealers who wish to spend more than the average on window decorating.

"Photographs of any description, which have a bearing on tires, automobiles or accessories—provided they are lettered or captioned, will attract the passersby. We do not advise the use of photographs smaller than 8x10 size. Enlarged kodak pictures of nearby country road scenes are always interesting to the motor car owner."

When you save and buy WAR SAVINGS STAMPS you help make the world safe for democracy and at the same time make your financial future safe for yourself.

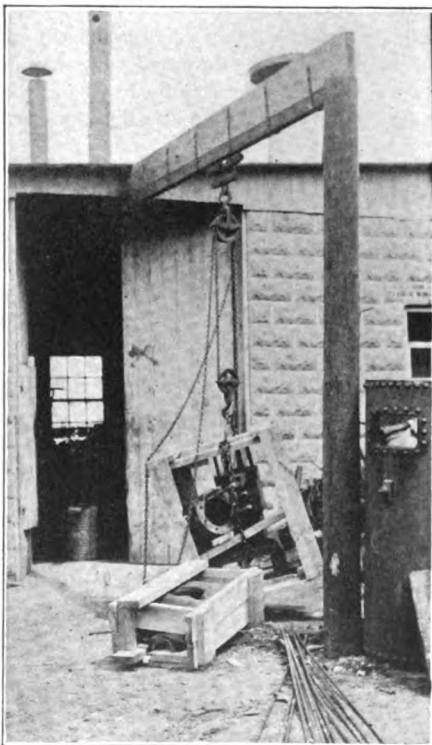
Welding, Cutting and Brazing

Overhead Trolley for Small Shops

By DAVID BAXTER.

One of the vexing problems in the small welding shop is the handling of heavy jobs and a great many times it is necessary to handle the job quickly and deftly. In fact, the success of the welding often depends upon the rapidity with which the job is handled. Aside from this it is a costly part of the work. A great deal of time is lost by not having some facilities for unloading, loading and moving the different heavy castings which come to the average welding shop.

Many small shop owners are unable to afford a traveling, hand or power crane. Most of them are located in buildings that are not constructed to accommodate any sort of crane. For these shops an overhead trolley is a good substitute. It is cheap enough for all and is easily installed. It is capable of many adjustments to suit a variety of conditions and may be made strong enough to carry any load that may come to the shop.



Overhead trolley at work.

The picture shows one form of home-made overhead trolley. It is conveniently arranged to permit a dray or truck to drive under the rails, thus enabling one man to unload or load a very heavy casting. This is done with chain blocks shown in the illustration.

The shop doors are high, which allows the castings to be pushed directly into the shop, where they may be deposited on the welding floor. Or the job may be left hanging on the blocks over the preheating fire. The chain blocks will be found doubly useful where it is desired to move heavy castings while they are hot, a thing that is almost impossible to do by hand.

After the work is finished the piece may be delivered with a minimum amount of time, as it is merely pushed outdoors and loaded onto the dray. The beauty of it is again, one man can do the whole thing.

The overhead system is not confined to small shops but may be installed and used to an advantage in many of the larger ones. The system may embrace any number of switches so that the work can be delivered to any part of the building, and returned in the same manner to the dray.

An ingenious mechanic can easily construct a home-made trolley system. All that is necessary is a quantity of angle iron, bolts, strap iron and some small wheels or rollers, together with some large nails, a stout post and some timbers.

In the picture you will notice a small door opening through the left large door. This permits the workmen to enter the shop without opening the large doors. It is a real convenience during winter, or while a particular job is being welded, as it lessens the danger of cold blasts of air striking the weld. Some welds are spoiled by allowing cold air to strike them at a critical moment.

The shop in the illustration is small but frequently handles broken castings weighing from one to two thousand pounds. This would be very difficult without the chain blocks or some kind of crane.

Chamfering a Steel Shaft

There are several ways of chamfering steel shafting. It may be accomplished with a hacksaw or chisel, or the ends to be welded may be made wedge-shape by grinding on an emery wheel. Or, what is probably the more preferable, the metal may be cut away with the cutting torch.

The result of the latter method is shown in the accompanying cut. The chamfering was done by holding the cutting torch diagonally across the end of the shaft—cutting, or so to speak, blowing away one corner of the metal. The shaft was then turned over and the other corner removed in the same way. This made a sort of wedge-shaped end on one of the pieces of shaft. The other piece was treated in the same manner.

The two pieces of shaft were then placed on V blocks with the points of the wedges touching. Four V blocks were used, two

of which are not shown in the picture. After the shafting was placed on the V block, a square was placed along the shafting over the chamfer, and the different V blocks wedged up until the shaft was lying in a straight line.

The V blocks rest upon a heavy plank which has been elevated above the floor enough to make the welding easier to do. The small piles of whitish substance beneath the chamfer are the burned steel, cut from the ends of the shafts. It will be noticed that the steel is cut away to the very heart of the shaft. This is essential on all such jobs in order to insure a strong, homogeneous weld.



Chamfering with cutting torch

During the welding a light hammer was employed to pack the metal into a still more solid joint.

One V groove was welded about one-third full and hammered down. Then the shaft was turned over to bring the other V upward. This V was welded and hammered the same as the first. Then the process was repeated on the first weld. Then on the second again, and so on until the grooves were packed full. A sufficient amount of new metal was added to each V to make the shaft round when the welded part was machined.

Note the wide angle of the grooves formed by the chamfering. It is a common fault of many torch operators to make these grooves too narrow. In other words, the chamfering is made too steep. Where this is the case it is more difficult to weld because of the small surface with which to fuse the filler metal. It makes the weld abrupt and easily broken.

Better a little too much chamfering than not enough.

Keeping Cool

As summer and its scorching weather is coming on apace it may not be amiss to give a few of the tricks used by some torch



The Curtis Sign

Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.

Install a Curtis Air Compressor

Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

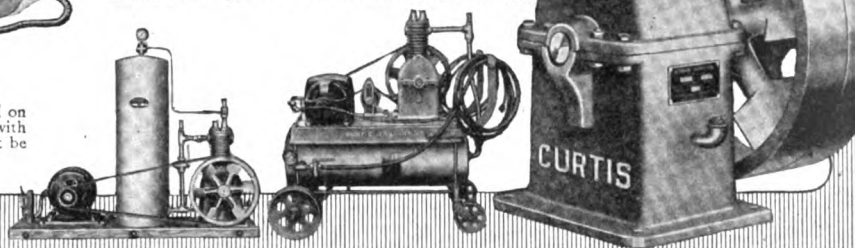
CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.

1515 Kienlen Ave., St. Louis, Mo.

Branch Office—530-U Hudson Terminal, New York City



DEALERS—Here's a quick seller with liberal profits for you.

SPRAGUE WORM STEERING GEAR for Ford Cars

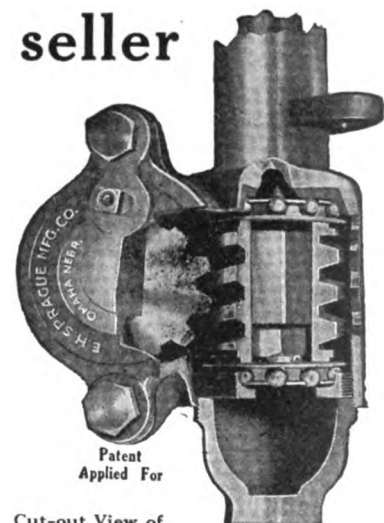
Every Ford owner knows that his car needs stronger steering equipment—something to get him out of ruts, prevent cramping or buckling when he hits a bad place, prevent locking over center and hold his Ford to the road.

You can sell the Sprague Worm Steering Gear under our guarantee of
MONEY REFUNDED IF NOT SATISFIED

DEALERS

The Sprague Worm Steering Gear retails at \$15. We allow you a liberal profit and you can make an additional charge for installing. You should easily sell this gear to 90 per cent of the Ford users in your community.

Write or wire us for our dealer proposition.



Cut-out View of
SPRAGUE WORM STEERING GEAR
for Ford Cars
Ball Bearing Floating Shaft

Victor, Iowa.
March 18, 1918.

E. H. Sprague Mfg. Co.,
Dear Sir:—Your letter of recent date is at hand in regard to the worm steering gear we got of you.
It is all you claim of it and the party that we put it on for would not take it off for three times its cost to him. We will sell many of them this season. They sure are the stuff for the Ford.

Yours truly,
Craft & Craft Garage.

Sold through jobbers and dealers—Made only by the
E. H. SPRAGUE MANUFACTURING CO., Dept. 8, Omaha, Nebraska

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

operators in their endeavors to keep as cool as possible while working on a heavy job of welding. These tricks depend somewhat on how the operator is situated; whether his shop is large and completely equipped; whether it is located in a country town, or whether there is access to any form of power.

If the shop is located in connection with a garage there is usually plenty of compressed air. In this case the air line should pass through the welding department. If the welder has access to compressed air, he can, with the aid of deflectors and other devices, quite easily arrange to have it so he can throw a stream of cool air across his hands and face while he is working on a hot, heavy job. The device can be arranged so there is no danger of cold air striking the weld.

Compressed air can also be utilized to hurry the work, and thereby give him a chance to cool off sooner by causing the preheating fire to burn more briskly.

If the welder has no access to air, but, has electric power, an electric fan is a great help on long, hot jobs. The fan may be fastened to an arm or bracket, which is movable and adjustable, fixed to a position near the welding table.

A bucket of cold water handily placed, wherein the operator may dip his hands from time to time, is a great comfort. The operator should wear cotton gloves which may be dipped in the water whenever it is desired. The cotton gloves do not absorb the heat like leather.

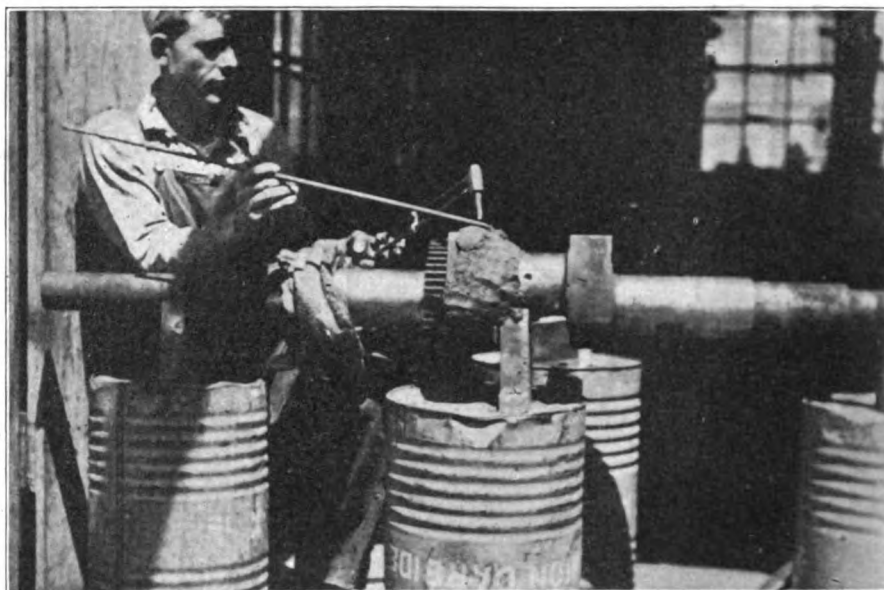
Asbestos shields are another hot weather defense, as are a number of other tricks which the operator should be able to "dope out" for himself, when he gets hot enough.

Method of Handling Heavy Shaft

A simple contrivance for handling broken crank shafts is shown in the accompanying picture. Four V blocks are employed, upon which the shaft is leveled. It is well to elevate the job a few feet above the floor as it enables the welder to work without so much fatigue as when the V blocks are placed upon the floor. The empty carbide cans shown are well adapted to this purpose.

First the two end V blocks are placed so their grooves are level horizontally. They may be leveled with a straight piece of shafting which is kept on hand for this purpose. Either V block may be wedged up to meet a spirit level placed upon the straight shaft. It is not absolutely essential to use a spirit level except to make certain that the crank shaft will lie straight upon the V blocks; it is possible to do this with the eye if the V blocks are true.

After the end blocks are correctly set, put the crank shaft upon them. Then turn the crank to one side and place a third V



Heavy shaft mounted on V-blocks.

block so it will engage the crank, as shown. Now on the opposite side of the shaft place another V block at the same distance from the shaft as the other one. This last V block should catch the crank when it is turned over. The whole arrangement may be employed on crank shafts broken either in the crank or in the straight part of the shaft. And it is handy for welding either large engine crank shafts or smaller automobile crank shafts.

In the case illustrated, the break occurred in the crank. First, the metal was cut away on both sides of the break to form the usual wide V, on both the upper and lower sides of the shaft.

One of these V's was welded about one-third full of filler metal, and then hammered down lightly with a small hammer. The crank was then swung over to the other V block and one-third of the other groove welded and hammered. The crank was then turned back to the first block and another third of the first groove welded.

Both grooves were welded a third at a time until filled. Surplus metal was added and hammered at the last stage of each weld. After the welding was completed the whole weld was reheated to a red hot, covered with asbestos paper, and allowed to cool slowly. This was done to cause the job to cool equally, thus preventing the crank from distorting.

The V blocks are the chief element of this method of handling crank shafts. The job may be turned over and back, quite easily, any number of times, without causing the shaft to be thrown out of line, and without interrupting the welding process for more than a moment or so. A number of V blocks form an indispensable part of the equipment of any welding shop. They will be found to be handy for numberless different jobs. They occupy but little storage space and are not easily broken, besides being cheap as to first cost.

A more elaborate form of V block may be constructed of angle iron, having rollers to form the V's. This, of course works easier but will give no better service than the common kind.

On some jobs the V blocks are bolted to the welding table; this permits the job to be shifted endwise without danger of upsetting the V blocks as the job will move quite easily endwise, as well as roll side-wise.

Auto Parts, Milwaukee, Now Badger Mfg. Corp'n.

The Auto Parts Manufacturing Company of Milwaukee, manufacturers of Badger accessories—including bumpers, steering wheels, tire carriers, cutout valves, etc., has changed its name to the Badger Manufacturing Corporation. The name Auto Parts has become very common, being used by a number of other accessory manufacturers.

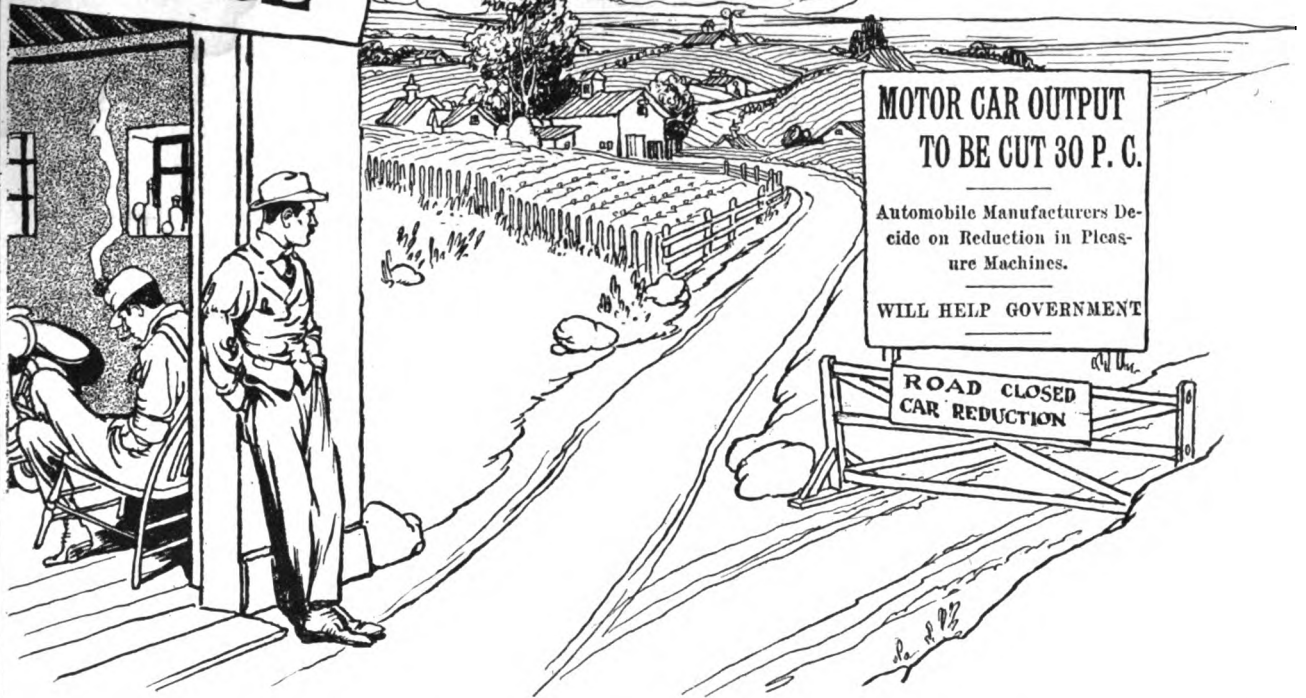
The officers are Walter H. Schwab, president and general manager, and Edward J. Cunningham, secretary and treasurer.

Miller Rubber Company Opens Pittsburgh Branch

The firm of Stewart & Harper, of Pittsburgh, wholesale distributors for the Miller Rubber Company, Akron, Ohio, having been dissolved and the Miller tire business in Pittsburgh having assumed unexpectedly large proportions, the Miller concern announces the establishment of a direct factory branch in that city.

The new branch is managed by S. S. Stewart, late of Stewart & Harper, and is located at 5968 Baum Boulevard. The plant is said to be one of the most extensively equipped among all the company's numerous branches.

DEALERS AND GARAGE OWNERS— TAKE THE OPEN ROAD TO PROFIT



What if your sales of cars are falling off? Don't worry. You must and can keep on doing business at a profit—
By selling

Western Electric POWER AND LIGHT

Labor on the farm is hard to get and still harder to keep. Electric power and light—the Western Electric kind—is the answer. It is being advertised in the Saturday Evening Post and advertisements in 20 of the leading farm papers. You can easily get your share of the business.

THE TERRITORY IN WHICH YOU
LIVE MAY BE OPEN

Mail the coupon and get the full
details

Western Electric Company

Dept. 721., 195 Broadway, New York

1918

I am interested in learning more about your
sales agency proposition, and how I can sell
Western Electric Power and Light.

A.G.A.D.

Mechanical and Engineering Problems

Timing Troubles

Question: I have an Oakland eight cylinder car, 1916 or 1917 model, on which the ignition varies. This car is equipped with a Delco lighting, starting and ignition system and with a Northway engine. About two months ago I was driving at about twenty miles per hour, everything going smoothly, when the car began to slow down. I opened the throttle wider but it did not pick up much. I had the muffler cut out open at the time and the explosions became much louder as the car slowed down. I managed to get to a garage and they told me that the distributor arm had slipped. They fixed it and the car ran well for a few hours and then the same thing happened again. The garage man found the same trouble. He says that the cam which breaks the points and also carries the distributor arm slips on the shaft. He has replaced the cam and locking screw and also the arm and shaft but it does no good. The trouble has now become so serious that the timing changes every time the engine is started.

I understand that you give advice only to the trade, but ask you in this case to stretch a point and give it to me. I read an article of yours on the Oakland Eight some time ago and you seemed familiar with its construction. I am a practicing physician, in a farming community, and we have no large shop near us. The garage man knows I am writing you and is as anxious to get the trouble fixed as I am, as I am using his car while mine is laid up. Should you make any charge for this advice, I will be glad to mail you a check.—M. D., Illinois.

Answer: Sometimes the cam which carries the distributor arm does slip, but if you have replaced cam, set screw and shaft that could hardly be the case. I assume that the garage man has made sure that all gears in the distributing mechanism are tight on the shafts and are not jumping teeth. If all this is in good shape, see if the chain which drives the distributor and fan is tight. If this chain is loose, you can be sure that it is doing the mischief. This chain also drives the dynamo. The dynamo is supported by three bolts or cap screws. These cap screws are in slots in the timing gear case. In order to tighten the chain, loosen the three cap screws and raise the dynamo. Then with the dynamo in its new place tighten the cap screws again. This will remove your trouble. If the slots in the timing gear case are not long enough to raise the dynamo far enough to tighten the chain they may be filed out longer.

Am very glad to be of assistance to you and there will be no charge providing

the garage man does the work. Please have him write me and tell me what results he gets.

Rotary Engine Described

Question: In the last issue of your magazine you answered an inquiry of mine in regard to a two-cycle rotary engine and offered to give more details if I wanted them. You also asked for a description of the engine.

As near as I can remember, the engine had five cylinders and was star shaped. The people who were demonstrating it had it mounted in a kind of frame and had a propellor on it. I did not see it run, but talked to some people who did. I understand that the makers claimed some kind of a simple valve at the bottom of the cylinder did the work. They were selling stock in the engine company and some parties around here bought a little of it. I think the name of the concern was the World Engine Co., or something like that. If you can identify the engine from my description, will you tell me briefly how it works and also whether or not the stock in it ever made anything?

—, Illinois.



E. B. HINRICHSEN.

Answer: As near as I can figure it out, the engine was the Fredrickson, the patents for which are held by the Worlds Motor Co., a South Dakota corporation.

This engine embodies an entirely new valve which, in this case, replaces the check valve usually employed in two-cycle engines. There is no check valve in the intake pipe. This valve, or valves, as there is one for each cylinder, are of the oscil-

lating type and are located in the crank case at the base of the cylinders. They are rocked from side to side by the side motions of the connecting rods as they change over the center point of the crank shaft. The operation of one cylinder is as follows:

When the piston is at the bottom of its stroke the valve opens and remains open until the piston reaches the top of the stroke. The piston rising draws gas through the regular intake and crank case into the lower part of the cylinder. When the piston reaches the top of its stroke, the valve closes and forms a closed chamber in the lower part of the cylinder. As the piston travels down it compresses the gas in this chamber. The remainder of the cycle or stroke is regular two-cycle, a bypass chamber, baffle plate and exhaust port arranged in the usual way. The valve simply takes the place of the usual check valve and the first compression is made in the lower part of the cylinder instead of in the crankcase.

Great claims were made for the engine and a considerable amount of stock sold. Some flying demonstrations were made which seemed satisfactory, but as far as I know, the engine has not been placed on the market. I have never seen the stock listed. Perhaps it may come to have a value, but at the present time it seems to me to be purely speculative.

Mechanical Writer Takes Up Truck Service Duties

E. B. Hinrichsen, who has been connected with the AMERICAN GARAGE & AUTO DEALER since September, 1916, as writer of its departments on "Mechanical and Engineering Problems" and "How to Make the Shop Pay," has taken up new duties in the motor vehicle world. He has become service manager for the Chicago Republic Truck Co.

Mr. Hinrichsen has spent much of his business life in the mechanical end of the automobile industry. He was a garage mechanic, service expert and manager for nine years. For ten years he was chief engineer of the Wolf Motor Co., and later was with the Frederickson Engine Co. Recently he has been connected with the Western Electric Co. as consulting engineer at its Hawthorne plant, Chicago, which position he resigned to join the Republic truck organization.

The best results are obtained only when YOUR advertising policy and selling activities are made to work in perfect harmony.



Globe Air Compressors distinguish *your* garage as a "Leader"

IF you will stop to consider, Mr. Garageman, the vital necessity of investing your money in **quality** equipment, there is only one compressor you will buy—GLOBE.

GLOBE Air Compressors are recognized throughout this and other countries as dependable, economical and efficient equipment. GLOBE Air Compressors enjoy a reputation for giving service, for saving money, for **satisfying**.

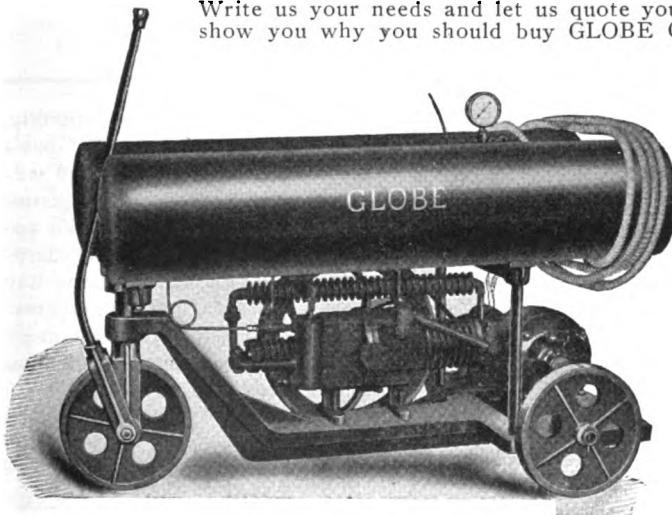
There are many **exclusive** features to GLOBE Compressor Equipment; features you cannot secure in other equipment; features that you want in a compressor.

GLOBE Air Compressors are made in all sizes to fit the needs of every place of business, and when you buy GLOBE equipment you have the satisfaction of knowing that you are buying **the best** at no greater cost than other equipment.

Get Ready Now for the Busy Motoring Season

Install that compressor and be in position to give your customers the service that pleases; the service that brings them back to your place of business when they want to spend money. **DON'T DELAY.**

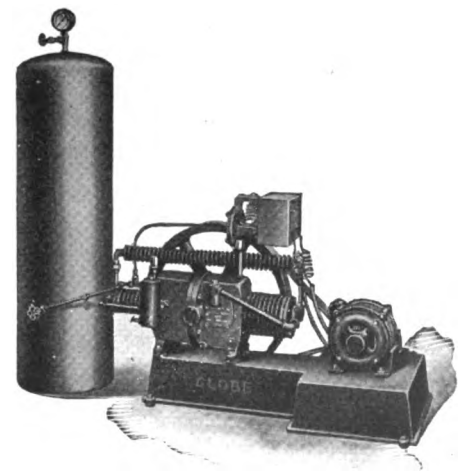
Write us your needs and let us quote you money saving prices on your equipment. Let us show you why you should buy GLOBE Compressors.



GLOBE Portable Automatic Air Plant

Your inquiry to Department B-2 will bring you interesting literature free. Ask for it.

**Globe
Mfg. Co.**
Battle Creek,
Mich.



Type B Two Stage Automatic Air Plant Complete with Tank

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

NATION'S GROWING DEMAND FOR STEEL URGES MORE USE OF TRUCK MAKERS

(Continued from page 13.)

sas—Wolfely Brothers—who have already converted and sold 14 used passenger cars made into trucks by the use of truck makers.

Their method is not to wait until they have an order for a truck before starting to assemble it, but they constantly keep building them up. By this plan they are able to make practically immediate deliveries to truck purchasers, a big factor in these days of freight-congested railroads.

At least nine-tenths of these trucks were sold to farmers. This was because there are more acres of ground being used for food production this year than ever before. When one stops to consider the vast amount of man power that is being drawn from the country as a whole, together with the greater amount of farm products being produced, the need for truck transportation is greater than ever before. In fact, farmers are fast realizing they must motorize the farms to the fullest extent.

All of us—not only the farmers—must help our country by doing everything we can to provide motor truck transportation. The best way to do the task is by accomplishing it at the least possible consumption of material

and expenditure of labor. That is why the use of truck makers is the best sort of patriotic effort.

When we consider the shipping problem, from the factory to the place where the motor transportation must be used, the superiority of the truck maker is easily seen. An ordinary railroad freight car will hold two, sometimes three motor trucks of any standard kind. But the same freight car will hold 20 truck makers, which when fitted to the same number of old passenger car engines, will provide not two or three trucks, but a score.

The demand, big and growing every day, for transportation was forcibly brought to my attention in Kansas City May 15 last. The Serlis Motor Company had a gathering of its sub-dealers there and asked me to talk to these men. They told me how the folks in their cities and towns—some of them 200 miles away from Kansas City—were asking about motor trucks and how soon could they get them.

The Serlis company officials have not been able to get as many passenger cars as their sub-dealers could sell and wanted to have me tell them of another source of profits. After I told them how they could all get into motor truck selling on little capital a good many of them gave orders to the Serlis people, asking for deliveries as soon as possible.

Trucks Needed to Break Bad Freight Congestion

Shippers who wanted to get freight in less-than-carload lots into Baltimore during the week of June 2-9 were forced to ship by motor truck because the Baltimore Committee on Eastern Railroads ordered an embargo against inbound l. c. l. freight until the accumulation of shipments was cleared away. May 24 there were 381 carloads on the Baltimore platforms, 654 cars of l. c. l. freight waiting to be unloaded, and 167 cars on the lines bound for the city. Freight was being removed at the rate of 75 carloads daily, and it was estimated eleven days or more would be required to remove the accumulation.

The committee also decided to order freight removed from the platforms at the expense of the consignees after the expiration of the 48-hour free period. This indicates need of instituting the "store door delivery" system in Baltimore whereby a traffic director will have truckmen of the city deliver freight to consignees as soon as it is discharged instead of notifying the consignee by mail and waiting for him to arrange to have the goods hauled.

When shipments to the city are made by motor truck they do not pass through the railroad yards and freight houses but are delivered direct to the consignee. There are fifteen motor express lines now operating out of Baltimore on daily schedules over regular routes, while goods are frequently shipped by truck from Wilmington, Philadelphia, New York, Washington and other cities.

Brake Inspection Plan Endorsed by Officials

Automobile manufacturers and dealers throughout the United States are backing a movement to establish brake inspection on cars and trucks of all types. Although no national or state legislation has been passed to compel such inspection, motor vehicle owners everywhere are being urged to support the movement in the hope that compulsory legislation will not be necessary.

An official of a motor truck club says that 60 per cent of the accidents caused by brake troubles could be avoided, if proper inspection of brakes was made at least once each season. H. F. Blanchard, of the Thermoid Rubber Company, Trenton, N. J., who has consulted with prominent police and insurance officials, says the movement will eliminate thousands of accidents, which are daily occurrences.

Those backing the movement say they feel that after the success of the agitation against glaring headlights, which brought about compulsory legislation in many states, the brake inspection movement should meet with even greater enthusiasm.

Every motorist is being prevailed upon to have his dealer inspect his brakes regularly during the touring season. Truck brakes, in the opinion of one official, should be inspected at frequent intervals. A seal is being devised which will be stamped, with date of inspection, on the car each time the brakes are inspected.

"Advertising swells profits by speeding the turnover."—Printers' Ink.

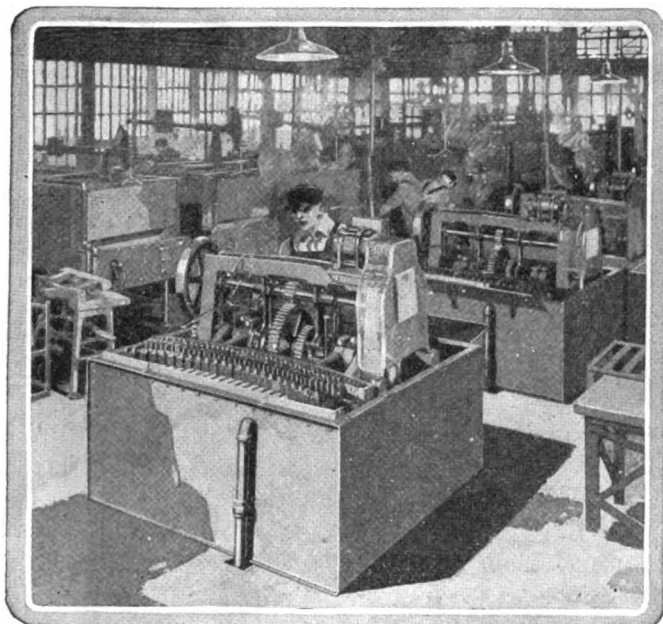
Olympian Four to Try High Gear Road Test

Plans have been announced by the Olympian Motors Co. for a high-gear drive from Detroit to Philadelphia over the Allegheny Mountains to test the power and flexibility of the new Olympian car. It will be made some time in August.

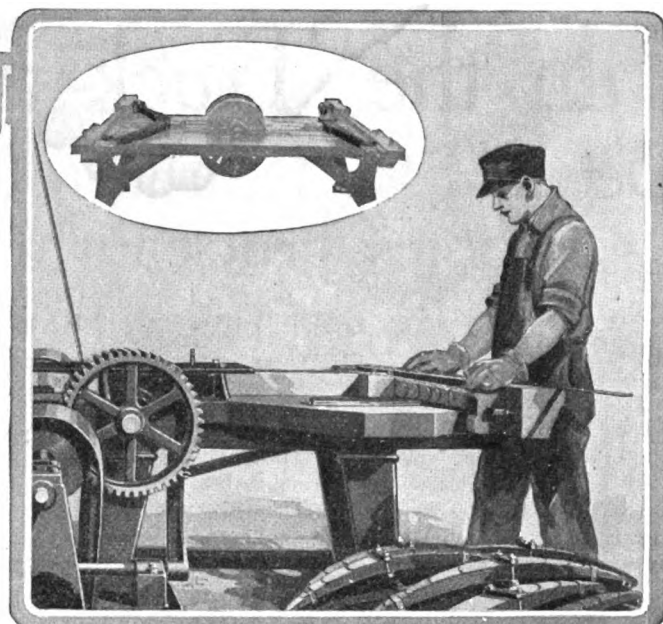
A regular stock four-cylinder car will be used, with all gears removed from the gear-box except the reverse and high. The driver will be compelled to start the car with the high gear in mesh and take all hills on high.

"We believe that the automobile, commercial car and tractor business would still be further advanced by the adoption of piston rings of standard width. We approve most heartily of standardization and will welcome the day when it is taken up more aggressively by tractor manufacturers and the standard determined upon put into universal adoption."

**J. E. NORWOOD,
Pres. Automobile Accessories Co.,
Baltimore, Md.**



FORMING and TEMPERING



TESTING FOR ACCURACY and ENDURANCE

Resiliency·Endurance·Accuracy

A REPLACEMENT SPRING, to be worth its price must combine three things: Resiliency, Endurance and Accuracy. And of these three Accuracy is the most essential.

A spring must "fit like a glove" if it is to be resilient and durable. It must "fit like a glove" if it is to give satisfactory service.

Your business as a repair man depends on your ability to give satisfaction to customers. Our business depends on your success and patronage.

Knowing this, we have built our

business on one policy: Satisfaction to Car Owners—Satisfaction and Profit to Dealers.

The Harvey Process is but a part of the Harvey Policy. Harvey Springs are scientifically made from the best spring steel obtainable. They are so carefully made and so thoroughly tested in design, material and workmanship that Resiliency, Endurance and Accuracy are absolutely assured.

If you are not already selling the Harvey Springs you should get in touch with us at once. It means satisfaction to your customers and profit to you.

There's a Harvey Jobber near you. Drop us a card and we will send you his name and our Spring Book containing specifications etc. of over 900 kinds of springs. Write today, you may need Harvey Help tomorrow.

Harvey Spring & Forging Co.

922 17th St.

Racine, Wis.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

In the Truck and Trailer Field

Demand for Dearborn Units Forces Truck Firm to Move New Factory Has Four Times as Much Floor Space as Outgrown Plant

The Dearborn Truck Co. moved May 1 into new and larger quarters at 3515-25 West 35th street, Chicago. The company purchased a \$105,000 modern three-story brick mill constructed manufacturing building with a large yard and private switch track.

The new property is 455 feet deep with a frontage of 133 feet, giving a total

senger chassis, have greatly broadened the scope of our business.

"Our manufacturing creed of building the best we can and our liberal selling policy to the dealer, together with all around satisfaction the Dearborn units are giving wherever they are sold is the answer, as I see it, to Dearborn success. We never have made a claim for our units which has



New plant of Dearborn Truck Company.

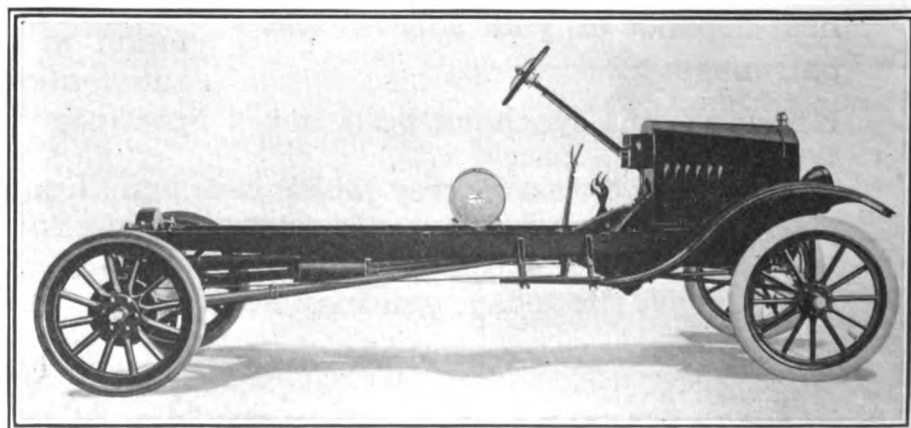
ground space of more than 60,000 square feet and more than quadrupling the capacity of the old Campbell avenue plant. A 450 kilowatt power plant elevator and new machinery have been installed as well as a sprinkler system for fire protection.

This move into larger quarters and purchase of their own building was made necessary by the greatly increased demand for Dearborn truck units and the national success of this company's product. As formerly, the factory sales offices will be located at the plant proper.

Speaking of the purchase of the new plant S. D. Porter, treasurer and general manager, said:

"This has come about simply through the natural course of events. There is and will be for many years an increasing demand for high grade dependable truck units such as we are building. The success of the Ford-Dearborn unit with the Ford passenger car has only been surpassed by the growing popularity of the Dearborn universal truck units which, by reason of their being adaptable to all pas-

not been borne out by actual performance in the hands of the users and both dealer and public have come to know that what this organization says may be depended upon."



Chassis of Ford one-ton worm drive truck of which Ford dealers have not been able to get enough to fill orders owing to the Ford Motor Company cutting down its production of vehicles to produce parts for Liberty airplane motors.

MOTOR TRUCK MOVEMENTS

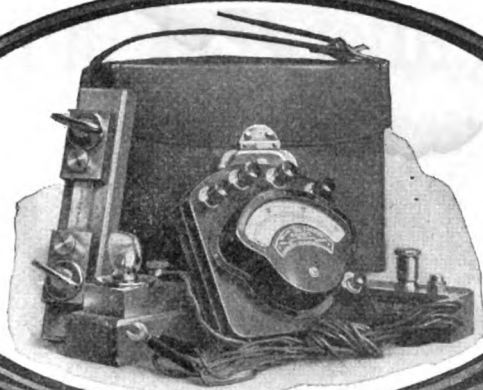
Organization of its own line of motor trucks to carry finished goods and raw materials between Philadelphia and New York is planned by the Waist and Dress Manufacturers' Association of Philadelphia. George W. Haney, president of the association, believes the plan would hasten and simplify the delivery problems of firms in the organization.

* *

The first commercial truckload of eggs from Vineland and Millville, N. J., into New York City—about 140 miles—arrived recently with not one egg broken. Delivery from the shipper to the wholesaler was made in 15 hours, which is faster time than that made by express shipments and establishes a record for motor haul of eggs, according to the Bureau of Markets of the United States Department of Agriculture, which arranged for the demonstration. The 5-ton truck carried 150 crates of eggs, weighing nearly 4 tons, the rest of the load being made up of crated glass. It left Vineland at about 11 a. m. and arrived in the wholesale district of New York City at 2 o'clock the next morning.

* *

Federal Food Administrator Herbert C. Hoover has indorsed the extension of rural motor express as an aid to food production and distribution. In a letter to the Highways Transport Committee of the Council of National Defense he says: "The development of the rural motor express idea, in my opinion, is in the line of progress and should redound to the benefit of the producer, the consumer and the railroads. This means of transportation should facilitate delivery, conserve labor, conserve foodstuffs and should effect delivery of foods in better condition."



Bespeaking Patience

It has become necessary to advise prospective purchasers of the Weston Model 280 Garage Testing Instrument that deliveries can no longer be made promptly. Under present war conditions, there are unusual requirements which must receive our consideration in advance of commercial orders.

For this reason, we can accept your order only on the basis of delivery when possible. We suggest that you place it as early as you can.

Appreciating fully the needs of our customers and that the radical superiority of the Weston Model 280 Garage Testing Instrument is now well known to Garage and Service Station men, we promise to execute orders in the order of their receipt and as quickly as conditions will permit.

We are confident that this frank explanation of the situation will be accepted by prospective purchasers in the co-operative spirit in which it is submitted.

WESTON ELECTRICAL INSTRUMENT CO.
30 Weston Avenue Newark, N. J.

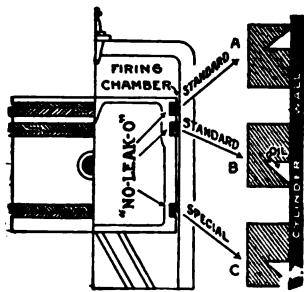
23 Branch Offices in the Larger Cities



Accessories and Garage Equipment

NO-LEAK-O RINGS STOP OIL DILUTION.

"As a solution of the problem of avoiding kerosene precipitation into the crank case with subsequent lubricant dilution we recommend the



use of a special type of piston ring, the No-Leak-O, that we have developed," says President J. E. Norwood of the Automobile Accessories Co., Baltimore.

"It is so installed that the top ring provides a groove with a square edge to catch any kerosene attempting to pass. This is pushed up on the compression stroke. After the explosion or when the piston starts down this refuse is carried out of the groove by capillary action into the firing chamber just after the explosion, when it is the hottest, and the kerosene is then vaporized and exploded or ejected with the exhaust and not into the oil pit.

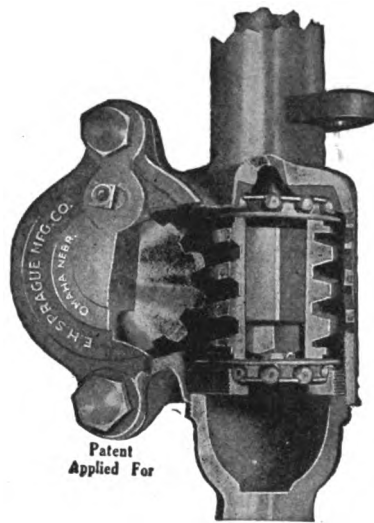
"Gas cannot be controlled or held in the firing chamber except by a seal of oil. Oil cannot be held down and adequate lubrication provided, except by a seal or dam against the oil. These are the principles adopted in our piston rings rather than to try and accomplish similar results solely by perfect fit, flexibility, etc."

WORM STEERING GEAR FOR FORDS A QUICK SELLER.

Garage men and accessories dealers report a rapidly growing demand for the Sprague worm steering gear for Ford cars, put on the market by the E. H. Sprague Manufacturing Company, Omaha, Neb. It appeals to Ford users not as a luxury but as an improvement on the steering equipment which adds immeasurably to safety in driving this car.

The first model of the Sprague gear was sold last season. "Unfortunately," says President E. H. Sprague of the company, "this model required adjusting wherever the steering rod was out of alignment or any connecting part not in perfect order, and some of the purchasers failed to get it on

properly. In every instance of this kind reported to us we replaced the gear or refunded the money.



"In our new 1918 model we have eliminated all necessity of adjusting. This model can be put on in half the time. It fits any Ford. With ordinary care it cannot get out of order. We have also added ball bearings, which improve the action and reduce wear."

The Sprague worm steering gear enables a Ford driver to steer easily out of dangerous ruts, and through mud, sand or on center-crowned roads. It holds the car to the road, prevents cramping or buckling when the front wheels strike a bad place, prevents locking over center and greatly reduces danger of skidding. Dealers make a liberal profit and an additional charge for installing. The gear retails at \$15.

RAIN-A-WAY PAD KEEPS WINDSHIELD FREE FROM RAIN.

A very handy and ingenious accessory is announced by the Badger Manufacturing Corp'n (formerly Auto Parts Mfg. Co.), Milwaukee. A small felt pad treated with a special solution is provided for rubbing over the windshield. It prevents rain from blurring the vision and keeps mist from collecting.



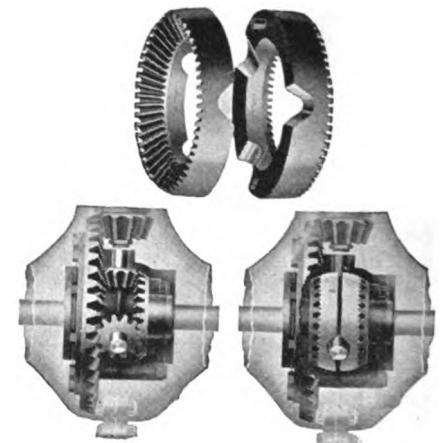
The pad leaves an invisible film on the glass which sheds the water like a duck's back. If the pad is applied at the approach of rain it is claimed that the rain drops positively will not collect. Mist or fog are also kept from gathering even on coldest days. The Rain-A-Way Pad is not greasy. Non-evaporating. It slips in one of the side pockets of the car, where it is always ready

for use. Readers are invited to send a quarter for a sample Rain-A-Way Pad, addressing Badger Mfg. Corp'n, Milwaukee St., Milwaukee, Wis.

BADGER TWO-WHEEL-DRIVE DIFFERENTIAL ON MARKET.

The Lewis Differential Company of Milwaukee is beginning the manufacture of the Badger "two-wheel-drive" differential. This differential gives all the advantages of the conventional differential and overcomes all its disadvantages. For instance, with the ordinary type of differential, the power always goes to the wheel offering the least resistance. With the Badger differential, the power is always on the wheel offering the greatest resistance.

On a slippery surface, or when traveling in sand or mud, the wheels take the full power of the engine, eliminating waste of power and burning out of tires through the spinning of one wheel. The car holds the road, no matter how sharply crowned, muddy, or slippery it is. There is little danger of getting stalled in mud, sand or slush, and no danger of skidding or sloughing into the ditch, or turning turtle rounding corners.



A differential for the Ford car will be produced first and sizes suitable for other cars as fast as manufacturing facilities will permit. Some six sizes of this differential take care of all cars. To install it in the Ford car means taking out the three pinion gears and putting in the two Badger gears, using the same spider. The illustration tells the whole story. It is claimed that any Ford owner can do the work with his regular set of Ford tools, or a garageman will do it for two or three hours' service charge.

A very attractive opportunity is offered distributors and dealers on handling the Badger differential and they are invited to get in touch with the Lewis Differential Company, 121 Huron St., Milwaukee, Wis.

NEW CATALOG OF PARRY COMMERCIAL BODIES.

The Parry Manufacturing Company has completed the mailing of a very comprehensive catalog featuring the Parry body line, to all the light commercial truck dealers throughout the United States. The illustrations and specifications of the various style of Parry bodies are so arranged and explained in detail that any person can easily tell just what is included as regular equipment or extras.

Without a doubt it is one of the most complete body catalogs ever issued and can

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....

.....

Name

Address

GARAGE SPECIALTIES

ROMORT

ROMORT AUTOMATIC AIR VALVES

For Service Stations



Style A
List Price \$3.00

The Style A Valve is a guaranteed device that has no equal for free air stations. Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop, or any station that is subjected to hard, rough usage. Air is released only when the Valve is pressed onto the tire. Equipped with the famous Romort Pump Connection Rubber.

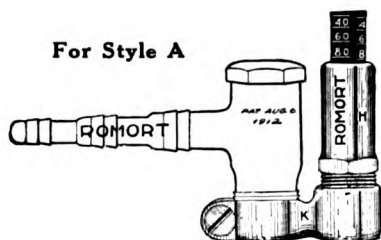


Style B
List Price \$1.00

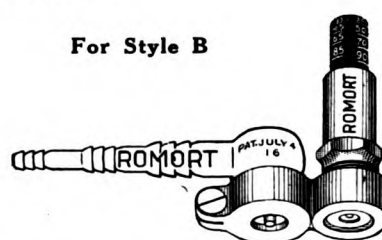
The Style B Automatic Air Valve is recommended to free air stations requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. We strongly recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.

ROMORT TIRE TESTER ATTACHMENT

A Garage Necessity—List Price \$1.50



For Style A



For Style B

A device for attaching your gauge to either Style A or Style B Romort Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflater combined in one, and the old trouble of losing gauge is forever over. We need only the holder attachment. Every garage with free air should be equipped with the Romort Air Tester Attachment. CAUTION—WHEN ORDERING, STATE WHETHER FOR STYLE A OR STYLE B VALVE.

ROMORT ENGINE CLEANER



Price \$3.50

This device has no equal for cleaning the dirt and grease from automobile engines. A child can operate it, yet it does its work with a thoroughness that will satisfy the most exacting. Holds two quarts of fluid—common coal oil is best. With the long spout, the operator reaches every nook and corner of the machinery—almost impossible with the old method of rags and waste.

We also manufacture straight and angle pump connections, tank connections and rubber washers. All jobbers carry ROMORT Specialties. Write for literature.

MANUFACTURERS
ROMORT MANUFACTURING CO.
OAKFIELD WISCONSIN

SALES DEPARTMENT
THE ZINKE COMPANY
1323 So. Michigan Ave. CHICAGO, U. S. A.

be classed as an authority in both body designs and their specifications for the light commercial, one ton, and one and one-half ton trucks. Motor tradesmen can obtain copies by writing to the Farry Company at Indianapolis, Ind.

A UTILITY ENAMEL ADDED TO NORWESCO LINE.

There is a big need for an all-round utility enamel which the motorist could use for retouching all shabby metal parts of an automobile that will be satisfactory for painting the engine. It should be air-drying for retouching work and possess heat-baking qualities that would insure satisfactory results when applied on an engine.

After several months of testing and experimenting, the Norwesco Laboratories have now added to their line of chemical specialties "Norwesco Utility Black." A black enamel designed for retouching all metal parts of an automobile such as the lamps, hood, radiator, and fenders, and also for painting the engine. Made in two sizes—pints and half pints which retail for \$1.00 and 60c respectively. Norwesco utility black is manufactured by the Northwestern Chemical Company, Marietta, Ohio.

KLAXON COMPANY MARKETING THE AUTOPHONE.

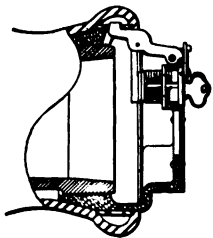
The Klaxon Company has added another "loud" automobile accessory to its line, which has brought into the Klaxon family through the absorption of the Stentor Electric Mfg. Co., maker of the Autophone, a loud-speaking telephone adapted to automobiles for communication between the driver and the passengers. The Autophone, being a telephone and not a microphone, differs vastly from other instruments used for similar purposes.

The receiver, weighing but three ounces, is shaped like a disc. Among the unusual designs gotten out, one where the receiver was concealed in a hand mirror, attracted much attention. An automatic cord winder can be furnished with the receiver, making it accessible to every occupant of a car. The transmitter is placed in such a position that the driver can hear the instructions without changing his position or moving the slightest. The entire equipment consists of a tiny receiver, a small sized transmitter and a few feet of wire. It can be readily connected with the other regular electrical equipment of the car, or with any six or twelve volt storage battery.

HOUK THIEF-PROOF HUB CAP LOCK.

In order to assist owners of Houk wheels in preventing tire thieves from stealing tires the Wire Wheel Corporation of America has brought out the Houk thief-proof hub cap locking device. This is an integral part of the Houk spare wheel carrier dummy hub and is shown in the accompanying cross-cut illustration.

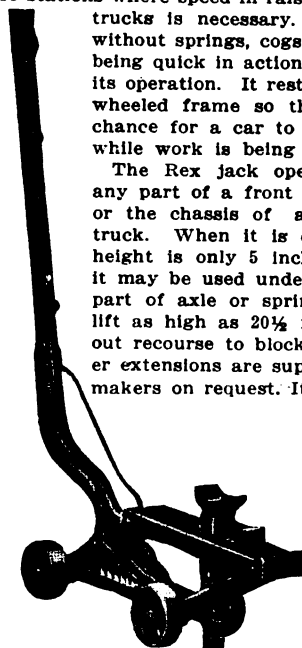
Each lock has a special key. The cap cannot be removed without releasing the latch with the key and using the Houk wire wheel wrench which presses down the latch and unlocks the hub. Full information about the device, prices and names of distributors may be had by writing to the Wire Wheel Corporation of America, Buffalo, N. Y.



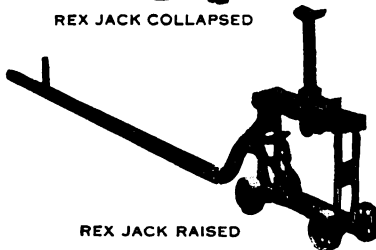
REX JACK HAS NO SPRINGS, COGS OR RATCHETS.

The Rex automobile jack has been especially designed for use in garages and service stations where speed in raising cars and trucks is necessary. It is built without springs, cogs or ratchets, being quick in action and safe in its operation. It rests on a four-wheeled frame so there is no chance for a car to tip or sway while work is being done.

The Rex jack operates under any part of a front or rear axle or the chassis of any car or truck. When it is collapsed its height is only 5 inches, so that it may be used under the lowest part of axle or springs. It will lift as high as 20½ inches without recourse to blocks, but higher extensions are supplied by the makers on request. Its wheelbase



REX JACK COLLAPSED



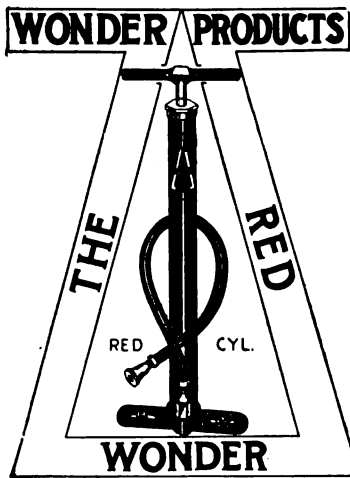
REX JACK RAISED

is 12 inches and its width 5 inches.

It automatically locks in any lifted position, after it has been wheeled under a car and the lever pulled. It is lowered by grasping the handle and lifting the lever. Its weight complete is 47 pounds. It is marketed by the B. & M. Mfg. Co., 5810 S. Wood street, Chicago.

WONDER PRODUCTS HAVE SEVERAL EXCLUSIVE FEATURES.

A number of exclusive features are claimed for the Red Wonder single acting cylinder pump by the maker, the Sidel-Rattner Mfg. Co., Brooklyn, N. Y.

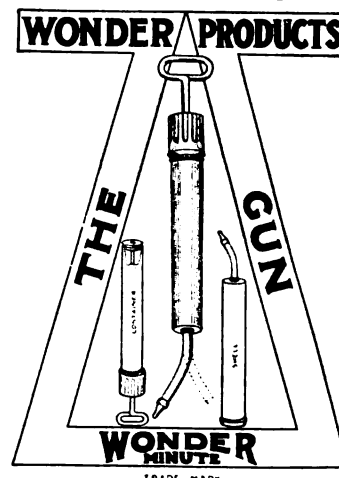


TRADE MARK

Among the advantages are a guaranteed air tight and dirt proof check valve. A special piston assembly which utilizes every ounce of air and reduces friction to a mini-

mum. Its general superior construction and the supreme quality of materials used makes it a pump that will stand the most rigid tests. Every part is free and independent of each other.

The Wonder minute gun is styled a "two in one" device as it can be used for oil or grease equally well. It is intended for both the individual motorist and the garageman.



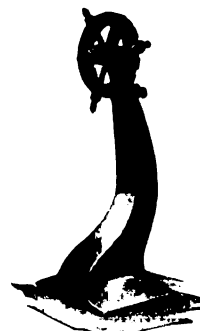
Some of its features are the tapered grip which locks the shell to the container firmly with a single motion. No creeping threads. The telescopic feature of the cylinders enables one to operate the gun under any conditions without danger of soiling either hands or clothes, as it is self-loading. It will draw and discharge the heaviest grease and lightest oil with such rapidity and ease that it is equal to any gun three times the capacity.

AKRON-WILLIAMS TIRE RE-BUILDING STAND.

This new stand is especially designed for tire repair-shop use on re-tread jobs and major sectional repairs, being similar to stand used for hand operations in tire factories.

Unlike the latter, however, it takes up a minimum of floor space and is much lighter in weight without sacrificing convenience or strength.

Another new feature is a spring ratchet attachment which permits the tire being turned either way at will, or being locked rigidly in any desired position. It is made by the Williams Foundry & Mach. Co., Akron, Ohio.



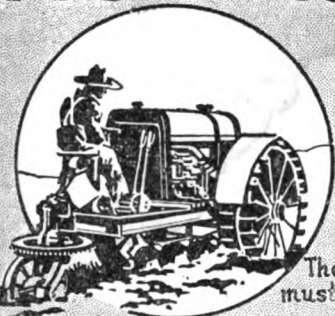
STORM REBORING MACHINE IS IMPROVED.

The Storm reboring machine, formerly known as The Storm and O'Hair machine, has several important improvements. It is driven by a threaded feed bar, is self centering and quickly set up. Tapered centering rings are now used on all models, and various size lead or guide rings are furnished, which adapt it for the different sizes of cylinders.

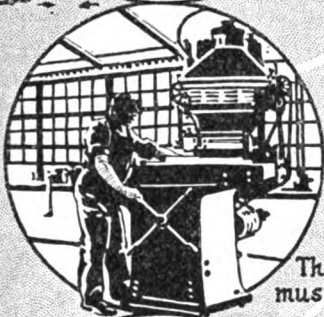
The head has six cutters, which are universally adjusted by a single center cutter adjuster. These cutters are so constructed that the lower leading beveled edges do practically all the cutting, leaving only a slight finishing to be done by the wide vertical edges.

A lower lead bearing is provided, which consists of a center bearing cone bearing plate and the various size lead rings. The

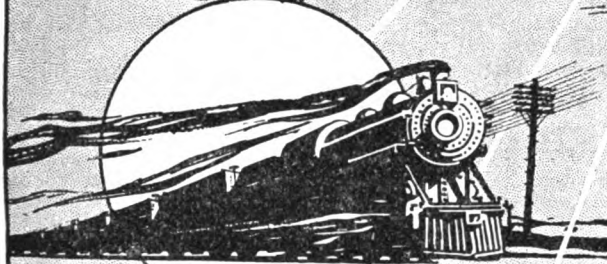
Work together for victory.



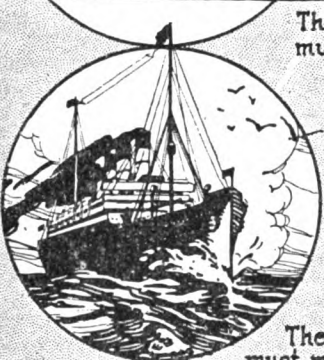
The Farmer
must raise more.



The Mechanic
must produce more.



The Railroads
must speed up.



The Ships
must make more trips.



The Business Man
must help the others.

On Washington's Birthday I watched the New York City detachment of our new National Army swing down Fifth Avenue. There were ten thousand of them marching through the heavy, swirling snow.

The even lines of olive drab figures, the bright, fresh young faces, the quivering flags came out more rugged and businesslike in the storm than they would have in the sunshine. The weather chipped in to show everybody that this was an army trained for a big and serious job.

I wondered how many more would have to go. We may have to send all the young men and then call for the older men, just as France has done, and just as we did during the Civil War. None of us want that to happen.

The only way to stop the outflow of soldiers is to beat the Kaiser and his horde of Huns. The only way to do that is to give our boys in the trenches so much of the munitions of war—of such excellent quality—that they will be as superior to the enemy as a workman with a turret lathe is to a workman with an old hand lathe.

So let us think quickly of better ways to do our work. Scarcity of labor has made the American people a nation of inventors. For war alone we invented the torpedo, the wireless torpedo, the submarine, the ironclad, the repeating rifle, the machine gun, the revolver, the magazine pistol, the aeroplane, and the high-power cannon.

The war today demands that we do more than we ever have done before. Let us all speed up, with the thought that we, too, are fighting the enemy, even if we can't see him. Let us hurry our work at our desks and benches, and thus keep millions of men out of the trenches.

(Signed)

John H. Patterson

President

The National Cash Register Company.

If one slows down all are delayed.

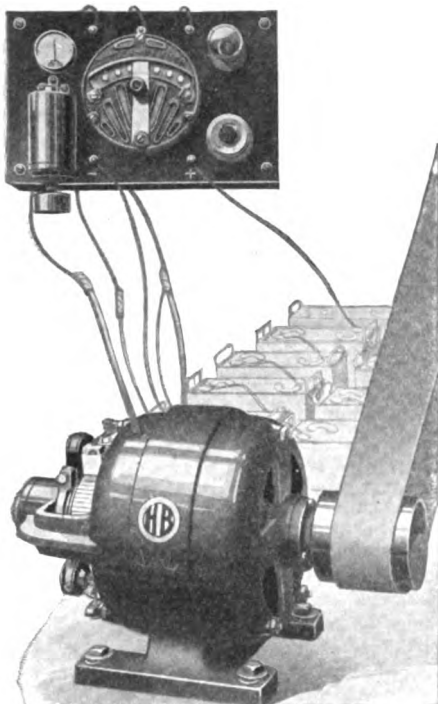
Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

bearing cone is case-hardened steel and adjustable. The bearing plate is provided with large cutting outlets through which the cuttings escape. This new bearing construction minimizes the danger of chips injuring the machine or work.

The machines are made in various capacities, ranging from 2½ up to 6 in. Full details can be obtained from the Storm Mfg. Co., Thompson, Iowa, successor to the Storm & O'Hair Co.

H-B CHARGERS MAKE MONEY FOR GARAGES AND SERVICE STATIONS.

Garage owners and service station operators are finding that the H-B chargers produced by Hobart Brothers Co., Troy, Ohio, are steady and rapid producers of profits. The business of recharging storage batteries is growing very fast and motor tradesmen who seek this work are finding it pays well. One H-B charger showed a profit of almost \$140 for the first month it was used and scores of H-B charger owners report monthly profits ranging from \$40 to \$50, some even nearing \$100 every thirty days.



The H-B belted charger shown in the illustration is a fine one for use where no electric current is available. It is operated from line shaft or engine and needs but 1 actual horsepower for driving purposes. It will charge seven 6-volt batteries or their equivalent at one time. Full particulars of the various H-B chargers, with details of the easy terms on which they may be bought, can be obtained from Hobart Brothers, Troy, Ohio.

MORE SERVICE STATIONS FOR "PASCO" WIRE WHEELS.

Arrangements for country-wide service facilities for sellers of "Pasco" wire wheels are being rapidly concluded by Sales Manager H. E. Van Horn of the National Wire Wheel Works, Geneva, N. Y. It is announced that service stations have been opened in San Francisco, Fresno and Los Angeles. This work is being handled by the Electric Equipment Company, which is prepared to care for "Pasco" users and will carry the necessary parts in stock. Other stations will soon be installed at Seattle and Spokane, as well as at a number of other important Western cities.

SPARE WIRE WHEEL CARRIERS FOR FORDS.

Spare wheel carriers for House quick change wire wheels for all models of Ford cars are produced by the Wire Wheel Corporation of America, Buffalo, N. Y. They are made of malleable iron, enameled black, include a bracket, a dummy hub attached with bolts and a malleable iron, nickel plated hub cap. The carrier for the touring car or sedan—shown above—is bolted to the rear spring clip. The carrier for the roadster—shown below—is fastened to the body of the car with the bolts furnished with the carrier.

MARVEL ACCESSORIES CO. MOVES ITS OFFICE.

The Marvel Accessories Mfg. Co., which has been located at 73rd street and St. Clair avenue, has moved its office and assembly department to 2011 East 46th street, Cleveland. The removal allows machine capacity that was urgently required.

"GLASSLESS LENS" IS NEW PHRASE COINED BY MOTORISTS.

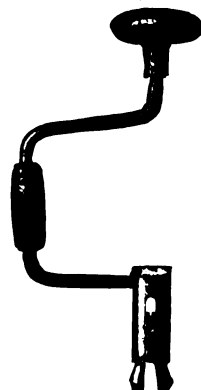
A new phrase has been coined by motorists, adding the term "glassless lens" to the dictionary of automobiling. The new device for keeping the light projected from automobile head-lamps within legal limits is known as the Raydex. It is an all-metal, cellular device that is put in the upper half of the head-lamp, behind the regular glass door. It contains more than 9,000 small metal reflectors, approximating nine square feet of highly polished reflecting surface.

When the light of the head-lamp beams through the Raydex, the device closely resembles a glass lens molded into thousands of tiny figurations. Its object is to deflect those rays which normally rise above the 42-inch level and cause glare, and to project them instead upon the roadway where they are wanted. The principle of construction of the Raydex is said to make it transmit 93 per cent of the head-lamp's candle-power, according to illuminometer test. It was invented in Jamestown, New York, where it is being made by the Omolite Company.

R. W. Otto, sales manager of the Omolite Company, declares that the perfected control of light brought about by the Raydex will enable state laws controlling head-light illumination now to be revised and enforced.

NEW UTILITY RIM WRENCH IS IMPROVED.

One of the most serviceable tools for motorists is the new Improved Utility Rim Wrench. It fits into a tool box without folding and is attractive in appearance, the brace being nickel-plated, the tube containing jaws finished in black enamel, with handles to correspond.



The jaws—which are ¼ of an inch heavier than before—are drop-forged and case hardened. The tube containing the jaws is shorter to eliminate folding that was necessary with the former type. The wrench takes every size of nut on every

make of rim and can be used as a general service tool as well as a rim wrench. It is a fast seller and full information as to trade discounts, etc., may be had from the maker, the Hill Pump Valve Co., Archer avenue, Canal and 23rd streets, Chicago.

SIMPLICITY DEMOUNTABLE WHEELS MAKING BIG SUCCESS.

The Simplicity Wheel Co., Grand Rapids, Michigan, is meeting with a large measure of success. The concern, started in a small way a little over a year ago, now occupies a new modern home with full daylight on all sides and more than 12,000 feet of floor space. The offices, and sales-rooms occupy several hundred feet on the ground floor where practical demonstrations of the Simplicity demountable wheels for Fords are to be had at any time.

The officers are: F. B. Raymond, president; F. W. French, vice-president; George Clapperton, secretary-treasurer; W. C. Everett, general manager.

The Simplicity Wheel Co. is making many shipments from its plant at Grand Rapids, Mich., to foreign countries, among which are Australia, New Zealand, Siam, South America and Europe, in fact, most every country where Ford cars are in use.

EVER TIGHT PISTON RING FIRM HAS PRIMER.

The Ever Tight piston ring, a three piece ring with novel mechanical features, has been on the market for six years, but has only recently been exploited in the Eastern market. The novel feature of the ring is a combination three point radial expansion and right-angle interlock.

Nearly every automobile owner has at some time had more or less trouble with his motor on account of oil passing the rings and getting on the spark plugs, causing the motor to miss fire and also loss of power, resulting from the compressed gas blowing by the old style one piece piston rings, all of which, it is claimed, is stopped by the use of this ring.

A very interesting little booklet, entitled "The Piston Ring Primer," gotten out by The Ever Tight Piston Ring Co., of St. Louis, Mo., will gladly be sent to motor tradesmen upon request.

COUPON BOOKS FOR GASOLINE AND SUPPLIES.

Coupon books for the use of garagemen, accessory dealers and service station owners are now available, being produced by J. P. Forbes, maker of Forbes Indexed Coupon Books, Coshocton, Ohio. The greatest advantage of these books is that when sold to a car owner the tradesmen can deliver gasoline, other supplies or accessories to any member of the owner's family who presents the book when obtaining the merchandise. It enables the garageman or supply dealer to get his money in advance, so doing away with the necessity of collecting each time or going to the trouble and expense of carrying many charge accounts. The gasoline book has coupons for 1, 2 and 5 gallons; for a total of 100 gallons. The supply book has coupons of 1, 2, 5, 10, 25 and 50 cents—the total being \$10. Mr. Forbes will supply full information as to prices and trade discounts to motor tradesmen who write to him at Coshocton.

GASOGRAPH TELLS STATE OF FUEL SUPPLY.

One of the newest accessories produced for the automobile trade is the Gasograph, which has a dashboard dial that tells how much or little gasoline there is in the fuel tank. It can be used for cars of all kinds, using vacuum or gravity feed to the carburetor. It is made by the New Standard Adding Machine Co., 3701 Forest Park boulevard, St. Louis, Mo., and inquiries as to prices, discounts, etc., should be marked Gasograph Department.

Announcing— AMERICAN 5-GALLON DOUBLE ACTING CURB PUMP

This new American pump is designed for filling stations and garages which demand "up-to-the-minute" equipment.

Some of the features which make this pump indispensable are:—

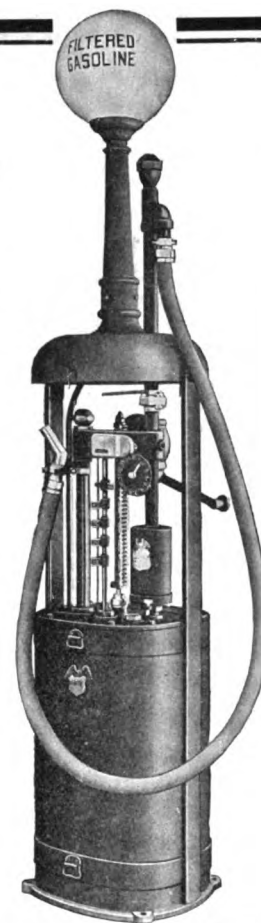
- 5 gallons every 11 turns of the handle,
- Double-acting, continuous flow,
- Pumps 30 gallons per minute,
- Accessible valves,
- Accurate measurement,
- Largest, heaviest, handsomest pump of this type ever designed.

This pump possesses the same high quality of materials and workmanship that characterizes all American Pumps.

Write for bulletins giving complete information, prices, etc.

Salesmen wanted—good territory open.

The American Oil Pump & Tank Co.
CINCINNATI, OHIO

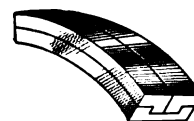


Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

Ever-Tyte Bill Says:-

It makes me laff to hear some of these guys complainin' about long hours and their pay, and tellin' what a mean boss they got—I'd like to have a few of those fellers stick along with me when I've got a hurry-up overhaul job. I'll bet they wouldn't holler any more about not havin' steam heat and soft pillers to set down on while they was workin'.

You wouldn't think it but I'll tell you it makes me feel good when I do a motor job—after everything is finished and my helper gives her a few turns, to have her start to singin'—hittin' on all fours—Oh boy—I'll tell you what helps do the trick—**EVER-TYTE PISTON RINGS**—they're the real gravy."

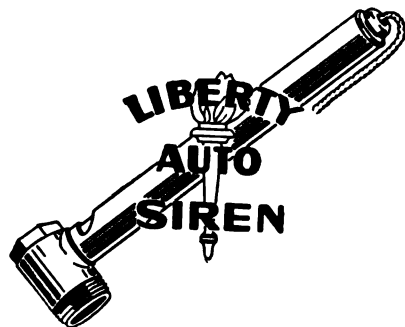


RIGHT ANGLE
INTERLOCK

The EVER TIGHT PISTON RING Co.
1609 KINGLAND AVE. SAINT LOUIS

LIBERTY SIREN.

This new warning signal is manufactured by the Liberty Accessories Corporation of St. Louis, and is meeting with great popularity. One of the features of the Liberty siren is that it warns without frightening. It sings like a mocking bird—has a range of two octaves and plays many different tone combinations.



The Liberty siren is easily attached to the exhaust manifold and uses exhaust gas, thereby costing nothing to operate. It is controlled from the dash or steering wheel. Comes complete with instructions for installation.

KORK TRED TRANSMISSION LINING NOW ON THE MARKET.

A transmission lining with inlays of cork, bearing the name of "Kork Tred" and employing the compressed air principle, is one of the new articles on the Ford accessory market. It is made by the Howe Manufacturing Company of Chicago, which heretofore has concentrated on the production of automobile lamps, featuring the Howe searchlight.



The distinctive feature of "Kork Tred" transmission lining is the air-cushioned retaining cup, which is riveted in the lining and holds the cork disk securely in the fabric. As a result of such construction, a pocket of air is trapped between the cork disk and the bottom of the cup, the cork disks engaging the drum first when pressure is applied to the brake pedal. The braking pressure, however, compresses the air in the cups and drives the corks flush with the fabric, thus permitting the fabric to take its full share of the wear and allowing the cork to retain its full frictional value. "Kork Tred" lining is sold only through jobbers.

ESSENKAY PRODUCTS COMPANY LEASES LARGE NEW BUILDING.

The demand for Essenkay tire filler has forced the Essenkay Products Company to obtain larger quarters in order to efficiently supply the needs of passenger car and motor truck owners. May 1, the Essenkay Products Company moved to a modern five-story building, 220-222 West Superior Street, at Franklin Street, Chicago. The engineering department designed special machinery for the new building. This machinery and the added space will make possible a larger daily output of Essenkay.

**IN THE SERVICE OF OUR COUNTRY.**

E. J. McMullen, formerly attached to the technical forces of the Olds Motor Works, is now a first lieutenant in the quartermaster corps of the National Army.

Eddie Rickenbacher, famous racing car driver, was elected a life member of the American Automobile Association at its annual meeting, May 24, in recognition of his patriotism. He originally went to France as driver for General Pershing and later joined the American aviation corps, where he has been very successful in disposing of German aviators.

Leland A. Mitchell, who drove a racing car years ago for the late Henry B. Harris, the theatrical manager, is now a lieutenant in one of the motor truck companies at Camp Upton on Long Island.

D. C. MacDonald, formerly manager of the Akron branch of The Mason Tire & Rubber Co., is at Camp Meade, Md., with Company H, 315th Infantry.

Guy W. Morgan, former head of the Abbott Corporation, is now in the Motor Truck Production Section of the U. S. Army.

George D. Wilcox, Jr., former advertising manager of the Republic Motor Truck Company and now a sergeant in the United States Aviation Corps, is editor of "Plane News," a paper printed for soldiers in service in France.

AMONG THE MANUFACTURERS AND EXECUTIVES.

C. B. Harvey has been appointed general sales manager of the Ever Tight Piston Ring Company at St. Louis, Mo.

Lee E. Clough has joined the Mason Tire and Rubber Company's forces to take charge of the concern's new solid tire department in its plant at Kent, Ohio. He was with the Goodrich organization for five years, later with Goodyear, and from 1905 until he left to take up his new duties was with the Firestone Company. For eleven years he had charge of the Firestone solid tire department.

C. S. Shuman has been appointed manager of the Vacuum Muffler Co., New York City, having resigned his connection with the Standard Metal Mfg. Co. at Newark, N. J.

C. S. Riegan, president of the Elgin Motor Car Corporation, Chicago, has announced the appointment of A. L. Chambers as advertising manager. Mr. Chambers has been confidential assistant to President Riegan for the last two years and succeeds W. E. Bertsch, who recently resigned.

William H. Taylor, formerly manager of the Kansas Moline Plow Co., has been elected president of the Overland Motor Co. of Chicago, distributor for Overland and Willys-Knight cars in the Chicago district.

Kenton Harman has given up the position of Eastern sales manager for the Cincinnati Rubber Mfg. Co. and become associated with Berrien-Durstine, Inc., a New York advertising agency. He was formerly Metropolitan district manager for the Dort Motor Car Co.

Dent Parrett, president of the Parrett Tractor Company, Chicago, and chairman of the tractor standards division of the Society of Automotive Engineers, has been notified of his election as second vice president of the S. A. E. The new vice president succeeds Major Fred Glover whose duties with the war department require his entire attention.

Ward Keller has been assigned to the Heath-Duplex department of the McCord Mfg. Co., by Sales Manager H. E. Westerdale and will make his headquarters at New York City. Mr. Keller was recently with the Chandler Motor Car Co.

Frank B. Amos has been appointed advertising manager of the Lalley Electro-Lighting Corporation, Detroit. He was formerly with the Studebaker advertising department and is joining W. H. Lalley, with whom he was associated in the Studebaker organization.

William J. Greene has joined the sales force of the Marathon Tire and Rubber Co., Cuyahoga Falls, Ohio, according to an announcement made by H. H. Replogle, manager of sales. Mr. Greene will have charge of the department of soles, heels, belts and specialties. He was formerly with the Vul-Tex Co., Barberton, Ohio.

A. H. Doolittle and W. L. Mack, sales manager of the Shakespeare Co., Kalamazoo, Mich., have opened an office in Detroit as manufacturers' agents for automobile parts and accessories. Mr. Doolittle recently resigned as sales and advertising manager of the Zenith Carburetor Co.

L. L. Newton has become general manager of the Stegeman Motor Truck Co., Milwaukee, having resigned as secretary and sales manager of the Luther Grinder Mfg. Co.

J. C. Stiles has resigned as manager of the St. Louis branch of the Stewart-Warner Speedometer Corporation to become president of the Liberty Accessories Corporation. The other officers are Harry G. Balthasar, vice-president and general manager, and Ernest G. Raff, secretary and treasurer.

J. H. Barnett has recently been appointed advertising manager for the Parry Manufacturing Co., Indianapolis. He was formerly associated in advertising work with the Prest-O-Lite Co., The Swinehart Tire & Rubber Co., and the Firestone Tire & Rubber Co.

Fred J. Miner has been appointed district representative of the Duplex Truck Company of Lansing, Mich. His territory consists of southeastern states. He assisted in the early development of the Duplex when the company's factory was located at Charlotte, and is one of the industry's pioneers. He was also formerly connected with the Olds Motor Works of Lansing and the Cadillac Motor Car Company of Detroit.

James R. Findlater, formerly general supervisor of sales, is now vice-president and director of sales of the Briscoe Motor Corporation.

L. E. Willson, who was vice-president in charge of sales since the inception of the present Briscoe Motor Corporation, has assumed active management of the Brown-Willson Motor Co., Chicago and Des Moines, distributors of Briscoe cars.

Milwaukee Curb Pumps

Power Or Hand Operated



Master Electric

From among the wide range of outfits which the Milwaukee line offers you, you can surely find one to exactly fit your needs.

Milwaukee gasoline curb pumps have earned an enviable reputation as business-getters. Speedy service and absolutely accurate measurement are the features that determine whether the motorists will patronize you or a competitor; speed and accuracy are the features which stand foremost in Milwaukee Outfits.

If you have an old, obsolete outfit, it will pay you to install a fine, trade-attracting Milwaukee Pump.

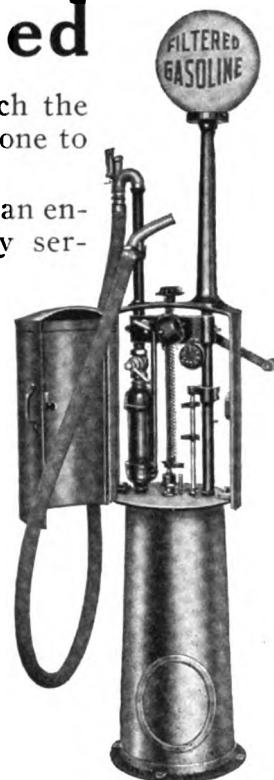
Write today for catalog and interesting literature.

Milwaukee Tank Works

Milwaukee, Wisconsin

Manufacturers of 30 types of gasoline and oil pumps and storage outfits.

Prompt shipments from warehouses in New York, New Orleans, Milwaukee and San Francisco.



Type 37

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air**.

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.

MIDLOTHIAN TEXAS.





One garage man said he would as soon try to do business without his air pump as without his Federal Sign.

You need this Sign!

A Federal Electric Sign is important to any business, but to the success of a garage business, it is almost essential.

Think it over a minute. Think how it will pull transient trade. Have *you* ever driven into a strange town or section of your city in need of gas, oil or service? Didn't you drive up the main street, looking to the right and left at each crossing until you saw a garage sign? That's what they all do. A brilliant Federal Sign (brilliant by day as well as by night) will bring these strangers to you.

It boosts local business too. It will "burn your name into the public mind"

Of all electric signs, the Federal is the one you will want when you know it.

Federal Electric Signs are made of steel, porcelain enameled with embossed letters—white on blue. They will not fade, rot or corrode. They need no painting or other care—just a wash now and then.

Federal Electric Signs are made in any design you want. They are sold on a twelve-months-to-pay basis.

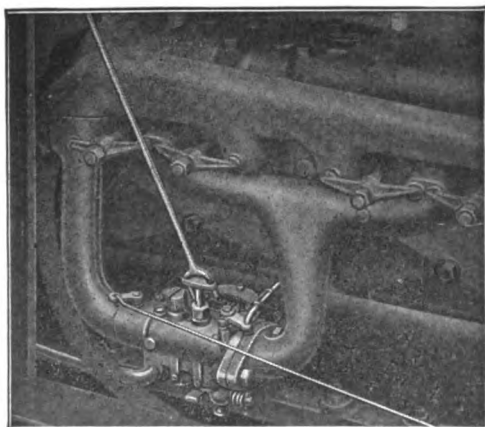
Write our Department S. Tell us of your particular requirements. We will design a sign especially for you without any obligation on your part to buy.

COMMONWEALTH EDISON COMPANY

EDISON BUILDING, 72 West Adams Street, CHICAGO

If located outside Chicago address: FEDERAL SIGN SYSTEM (ELECTRIC), Lake and Desplaines Sts., Chicago

Model N Marvel Carburetor



Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days' trial with money back if not satisfactory. Retail for \$9.00 complete.

Catalog on application.

MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.

The Breco Converter FOR

charging batteries or for any other purpose where it is necessary to change A. C. to D. C. is **Far Superior.**

**HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE**

The new, modern method tested by years of everyday service. Endorsed by highest authorities.

Price, \$24.00 Up---Sizes, 1 Battery Up



Battery charging becomes a very simple, inexpensive and mighty profitable matter with the BRECOCHARGER.

Write for Catalog No. 22

THE BRECO ELECTRIC CO.

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

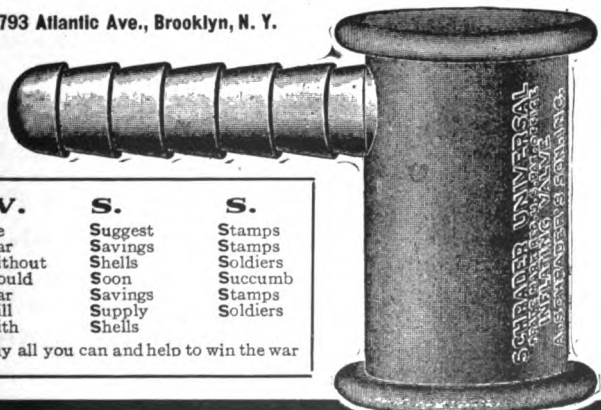
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{1}{2}$ inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

Do Tire Repairing

WITH THE SAME EQUIPMENT AS USED BY
ALL LEADING TIRE COMPANIES

RIGHT NOW—

HIGH tire prices and the nation-wide need for thrift is **doubling** the amount of tire and tube repairing. And the increasing shortage of men to do the work has opened up splendid opportunities for men of all ages, and all former occupations, to establish themselves in this money-making business.

With millions of cars in use and millions coming—all wearing down tires every day—no other field offers such big profits and sure opportunities—provided you start with the **right** training and the **most approved** repair outfit.

Akron-Williams

TIRE REPAIR EQUIPMENT

Designed and Perfected by Leading Tire Engineers, Used and Sold by Over 100 Tire Companies

Not Much Capital Required

With an Akron-Williams outfit, you can start now in a small way, or as a department of a store or a garage, at light expense; and add equipment as your business grows. Little money will buy a complete outfit that will do ordinary casing and tube repairs.

An Outfit for Every Size Shop

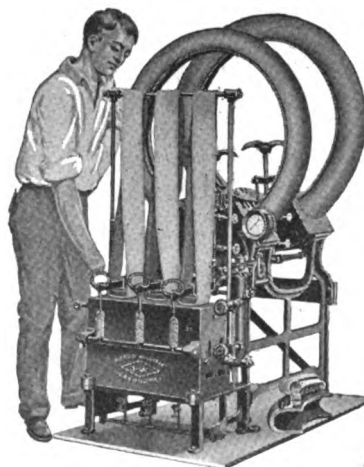
The Akron-Williams line is the largest and most complete. Outfits of every size, and a machine or tool for every purpose. No equipment is too large for us—no tools are too small.

**Learn Under the Best Experts
Get Choice of Best Locations**

For buyers of Akron-Williams outfits we arrange thorough and practical training in all branches of tire and tube repairing, under the personal direction of **experts in the big tire factories.**

Furthermore, we are constantly in touch with the best openings available all over the country and we help buyers of our equipment to locate where opportunities are Best.

Write, or Fill in the Coupon—TODAY



The Williams Foundry & Machine Company

River Street
Akron, Ohio

Exclusive distributors for California:

THE WATERHOUSE & LESTER COMPANY
San Francisco,
Oakland and
Los Angeles

The Williams Foundry & Machine Co.
River Street
Akron, Ohio

You may send me catalog, prices and full information regarding your tire repair equipment.

Name

Street

City & State

AKRON-WILLIAMS
A-W
PRODUCTS

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



Insist on NOKORODE

This soldering paste has proved ideal for automobile work. With NOKORODE delicate jobs can be done neatly and securely. It makes soldering in those inaccessible places easy.

NOKORODE is the soldering paste preferred by the automobile industry—and Uncle Sam.

Don't accept substitutes. If your jobber does not handle NOKORODE, order from us direct.

THE M. W. DUNTON CO.
Providence, R. I., U. S. A.



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

**Monogram Users are
Quality Choosers.**

**NEW YORK LUBRICATING
OIL CO.**

**NEW YORK CITY
and CHICAGO**
Branches in Principal Cities

Fill Up Our Soldiers' Pipes

America's fighting men need tobacco to make trench life a little more comfortable. Here's a chance to treat the boys at the front.

"Our Boys In France Tobacco Fund" has been organized to furnish "smokes" for the American soldiers and sailors in active service.

All labor and administrative expenses are contributed so that every cent you give goes to pay for tobacco, which is purchased in large quantities at a low price.

One dollar buys four packages of tobacco and sends them to France. Each package, costing twenty-five cents, has a retail value of forty-five cents and keeps a man in "smokes" for a week. Every dollar sent to "Our Boys In France Tobacco Fund" buys a bundle of tobacco that would cost \$1.80 at your cigar store.

In every package is a post card addressed to a contributor to the tobacco fund. In accepting the package, the soldier or sailor agrees to send on the card a message to his benefactor in the United States. According to the plan, every person who gives a quarter gets his receipt from a fighting man in France.

The work of this fund is approved by the Secretary of War and the Secretary of the Navy.

Send as many dollars as you can spare. Write your name and address clearly.

"Our Boys In France Tobacco Fund"

25 West 44th Street, New York City

Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



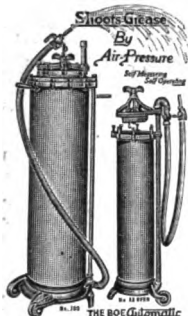
ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA

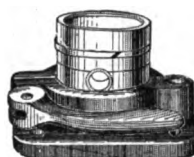
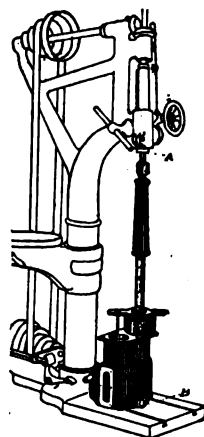


STORM MOTOR REPAIR EQUIPMENT

is making big profits for hundreds of automobile shops. The **STORM Cylinder Reboring Machine** is the most practical machine for any type of motor. SIMPLE, SPEEDY, ACCURATE and RELIABLE for hand or power. No shop complete without one. In daily use in all parts of U. S. A. and foreign countries.

Shortage of new cars makes it indispensable in large and small shops.

We furnish machines of varied capacities. Also special machine for Ford and Dodge.



The Storm Piston Vice

designed for the repair shop, holds the piston firmly while fitting rings, bushings, connecting rod, etc., without loss of time or injury to the various parts.



The Storm Connecting Rod Gauge accurately straightens and aligns Ford connecting rods, overcoming many cylinder and bearing troubles and insuring a smooth running motor.

WRITE FOR LITERATURE

STORM MFG. Co.
THOMPSON, IOWA, U.S.A.

AMPECO PRODUCTS

Sell readily because their superiority is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

American Machine Products Co.

Marshalltown, Iowa



Tire Insurance

THERE is not one serious argument to be advanced in favor of not buying a tire-pressure gauge.

Every man, woman or child who runs an automobile not only should have one but MUST have one if he, she or it cares anything about the mileage to be gotten out of tires.

When you buy a gauge, you pay for the gauge and save on the tires.

When you don't buy a gauge, you pay for the tires and save on the gauge.

Which would you rather do?

BUY
A

TWITCHELL AIR GAUGE

PRICE \$1.25

and save your tires

The Twitchell Gauge Co.
1518 So. Wabash Avenue, CHICAGO



Why Are So Many Fords Stolen?

—when equipped with so-called theft proof locks!

Because

every thief knows what a hammer will do to these locks.



Police Records show the "MUELLER" to be the ONLY Theft-Proof Lock on the Market

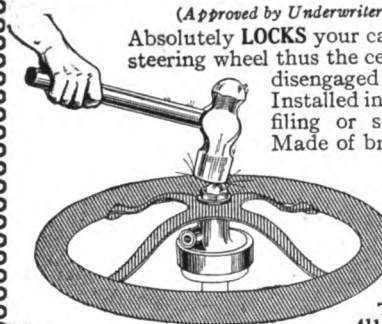
The Mueller Lock

(Approved by Underwriters Laboratories)

Absolutely **LOCKS** your car. No pulling up on your steering wheel thus the center pinion gear is never disengaged so it can be driven down. Installed in 15 minutes. No drilling, filing or special tools necessary—Made of bronze, nickel plated.

DEALERS—You will find the "MUELLER" Rigid wheel lock the best seller because it is making good. Not a car equipped with a "MUELLER" has been stolen, because it is impossible to drive or tow a car that cannot be steered.

THE RELIANCE CO.
411-417 So. Sangamon St., Chicago, Ill.



GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel** will put them back on the job.

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the **McDaniel** plant they are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the **SPECIAL MCDANIEL DOUBLE TREAD PROCESS**. Your old tires are now made into one good tire ready to give you thousands of miles extra service.

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

WILLARD SUPER HEATER

A great saving for the car owner.
Big Profits for You

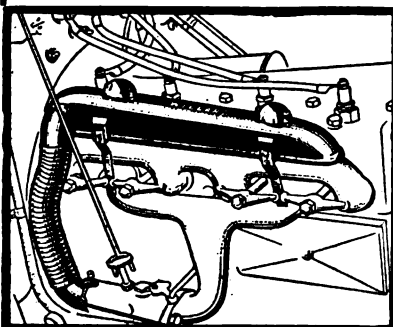
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD



Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

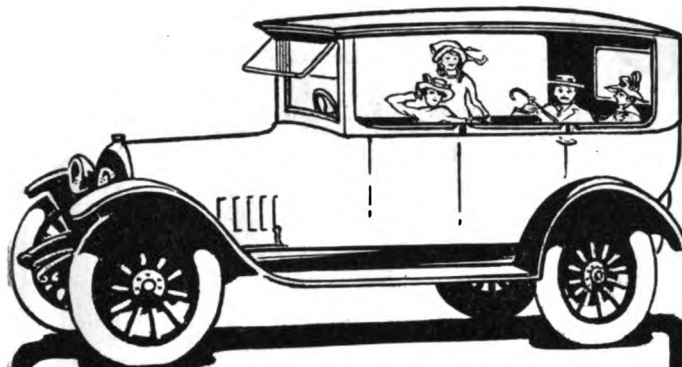
They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for **\$15.00**.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS



YOUR CUSTOMERS will want this pump!

You have heard the old maxim, "The proof of the pudding is in the eating."

The Jensen Auto Tire Pump has maintained a standard for the past four years and is **proof** and has **proven** its wonderful merits time and time again.

JENSEN TIRE PUMP

Ninety pounds pressure with one-fourth the effort of the ordinary hand pump.

Sounds mighty good—don't it?

W.H.HOWELL CO.
Geneva, Ill. U.S.A.



Purchase one and get the proof.

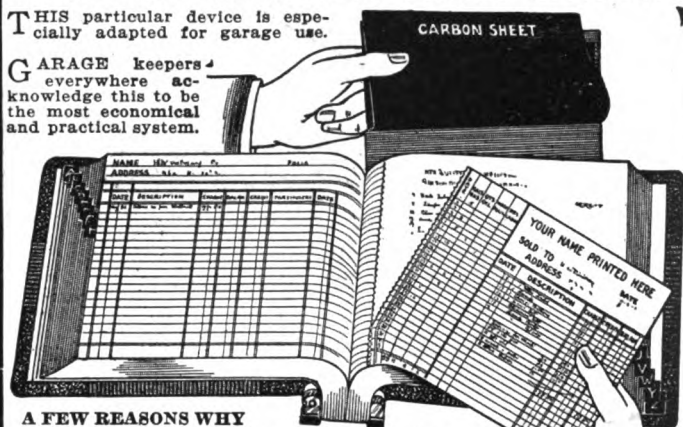
Write for jobbers' and dealers' discounts.

SAVE TIME AND MONEY

Our **SPECIAL GARAGE Bookkeeping Plan**
Gives You the **HIGHEST Possible EFFICIENCY**

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.
SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS
THOMAS J. HARTON & CO., Inc., 212x Church St. NEW YORK
Loose Leaf Specialties



Smooth as the flight of the birds



going North for the Summer is the progress of the Ford equipped with

W. & C.
Shock Absorbers

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



HB

BATTERY CHARGING

*Bigger Profits
from
Bigger Capacity*


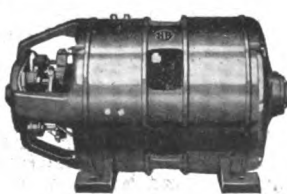
HB 32 Battery Capacity Charger

A new and big money-making equipment for Battery Service stations, garages specializing in battery charging, or wherever **bigger battery capacity and greater economy** are desired.

Amplly designed 5 H.P. motor, operating from city current, gives 2 K.W. Generator capacity. Will charge 32 6-volt batteries or equivalent at one time. Four separate charging lines and panels permit individual attention to every battery.

Plan ahead! Figure the probable battery charging business in your territory and install equipment with capacity to meet your future requirements and bring you the **biggest profits**.

Convenient terms of payment under which outfit should easily pay for itself while you use it. **Absolute satisfaction guaranteed or money refunded.** We furnish also smaller capacity outfits or belt drive where city current is not available. Write at once for further information, prices and terms.

Hobart Bros. Co.
Box G6 Troy, Ohio

HOLMES WRECKING TRUCK



Be prepared for "wrecked car" business : its profitable.

The profit you make on "towing in" jobs depends on the time and labor consumed. The HOLMES WRECKING TRUCK reduces this time and labor to a minimum. Use the truck as a lever to raise the wrecked car, then put under either axle and you can bring in any sized car quickly and easily. It enables you to give the kind of service that builds business.

Hundreds of garages are using it.

Very strongly built—frame and wheels of malleable iron castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price \$50. Discounts to garages and dealers.

ROBT. HOLMES & BROS. :: DANVILLE ILLINOIS



GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.
First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.
First National Bank Bldg.
Pittsburgh, Pa.



Barrel Pumps

Measuring and Non-Measuring. For Automobile Oils.

Visible measuring glass dome. Can be attached to gasoline pump you now have.

Your customers want to see the amount they are getting.

Write today for literature.

Groetken Pump Company
Aurora, Illinois

The *Geyser* VISIBLE GASOLINE DISPENSER

is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage. Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.



WRITE FOR DEALER PLAN ON KIMBALL TIRES

Kimball tires are doubling profits for some dealers. First-class fresh casings, positively not seconds.

	Non-skid Tubes		Non-skid Tubes
30x8	\$ 8.75	32x4	\$16.45
30x3 1/2	10.95	33x4	17.55
32x3 1/2	12.45	34x4	18.25

PRICES ON OTHER SIZES IN PROPORTION

Send us your order today, accompanied by cashier's draft on Chicago or New York, or money order. Large and small orders given immediate attention. Write today for territory. Prices will be advanced very shortly. Place your order now.

There's money in this agency.



**1469 Michigan Ave.,
CHICAGO**



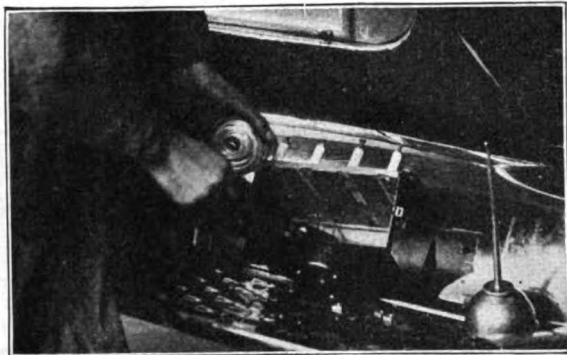


SIMPLICITY

Demountable Wheels Enable That Quick Change

DEALERS—Every Ford owner is interested. Write today for literature and trade proposition.

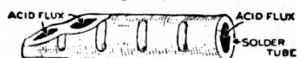
THE SIMPLICITY DEMOUNTABLE WHEEL CO., Grand Rapids, Mich.



Coil Box Connections

KESTER ACID CORE WIRE SOLDER

(Formerly Crystal-Core)



Also for radiator work, gasoline tank, speedometer shaft, spark plug terminals. It is the handiest and best to use. Combines both solder and acid soldering flux. Every garage or repair shop needs it as it saves time and labor. Sold in 1-lb. coils; on 1, 5 and 10 lb. spools.

Sample on request. Order from your jobber.



CHICAGO SOLDER CO.

Chicago, Illinois



GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

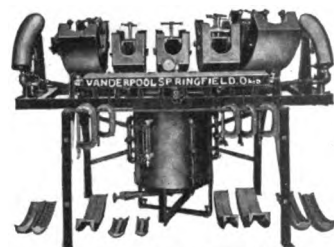
Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company

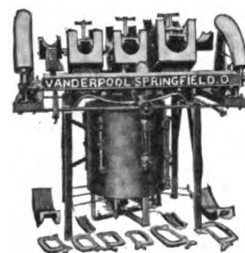
1002 Washington Boulevard
Chicago, Illinois

Big Profits in Vulcanizing with a VANDERPOOL!

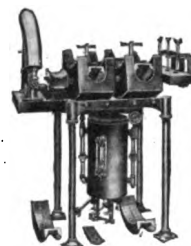
When tires are high priced as they are now, every motorist is anxious to secure the greatest possible mileage—in other words, now is the time to start in the vulcanizing business, or now is the time to install the most efficient kind of a vulcanizer.



Vanderpool 5 Cavity and Retreading with Bead Mold and long Air Bag or Cores

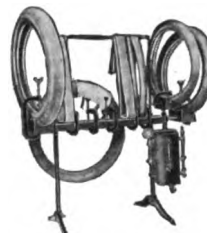


Vanderpool 3 Cavity



Vanderpool 2 Cavity

Every day which you defer buying a Vanderpool, means lost profits. The Vanderpool vulcanizer does perfect work, thoroughly and durably, at small cost. Requires very little floor space, and no experience to operate.



Vanderpool Model A 1 A

Out of the profits of your vulcanizing, you can soon pay for your Vanderpool. Pay for it while you use it.

Let us send you a copy of our illustrated catalogue.

VANDERPOOL COMPANY

Springfield - Ohio



The PANVAR Way for a lasting finish

Panvar dries over night and gives a hard, glossy and lasting lustre to your car. Unlike varnish, Panvar is a quick self-leveling fluid which can be quickly applied by any one. Only \$1.50 worth of Panvar is required to re-finish a car.

Dealers and Garages

There is a big sale of Panvar possible in your territory. Garage-

men can re-finish their customer's car over night.
Free sample of Panvar sent upon receipt of 10 cents to cover postage.
Get this sample and see for yourself.

THE PANVAR COMPANY

602 Bulletin Bldg.

Philadelphia, Pa.

REG. U.S. PAT. OFFICE



PISTON RINGS


Put Energy In Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.

KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.



Hydraulic Arbor Presses

work easier than any others.

We make many sizes for many purposes.

WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.

Tire Applying

Elgin Six

Chicago-Built Motor Cars

5-Passenger Touring **\$1,165** 4-Passenger Roadster

All-Weather Sedan **\$1,645** Military Scout Model **\$1,245**

Every Elgin Six Combines Distinction Endurance, Economy and Comfort.

ELGIN MOTOR CAR CORPORATION
2427 South Michigan Blvd., Chicago, Ill.

"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar Stock and are Heat Treated. For **STRENGTH and RELIABILITY**

They are unexcelled. Ask for dealer's discount.

Price **\$1.25**



Graham Roller Bearing Co., Coudersport, Pa.

WELDING PLANTS

\$25 to \$300

DESIGNED FOR ALL PURPOSES. SMALL CASH PAYMENT, BALANCE THREE TO SIX MONTHS. EVERY MECHANIC AND SHOP SHOULD HAVE ONE.

A. J. BERMO CO. : Omaha, Nebraska, U. S. A.


The New **OLYMPIAN**

4 cylinder, valve-in-head, 5 passenger Touring Car

\$1085
f. o. b. factory

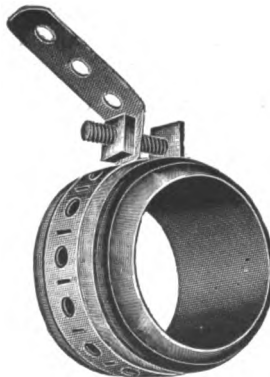
OLYMPIAN MOTORS COMPANY, Pontiac, Michigan

INLAND 1 PIECE PISTON RING



Over 2,000,000 in use—Supplied by jobbers everywhere.

INLAND MACHINE WORKS
817 Mound Street St. Louis, Mo.



Universal Hose Clamps

Are superior. One clamp adjustable for every purpose. They cover a world of usefulness. They reduce your stock and increase your turn-over. Wherever shown, the UNIVERSAL takes the preference. Let us prove it. Write for full information.

Dept. C.
Universal Industrial Corporation
Hackensack, N. J.

GUARANTEED SPRINGS

CARRIED IN STOCK FOR ALL MAKES OF CARS

For QUICK and SATISFACTORY SERVICE order your springs from

Write for our catalog TO-DAY—DON'T DELAY
Liberal Discounts to Dealers

AUTO SPRING REPAIR CO.
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Style "C"

BEARINGS SERVICE COMPANY

Nation-wide Service on Bearings

New York	Detroit	Portland, Ore.	Minneapolis	Kansas City	Denver
San Francisco	Boston	Pittsburg	Omaha	Cleveland	New Orleans
Chicago	Seattle	St. Louis	Dallas	Rochester	Indianapolis
Los Angeles	Atlanta			Philadelphia	Toronto, Can.

General Offices **COMPANY** Detroit, Michigan



The GREBFORD Unit will lengthen Ford cars in an hour's time!

Wheelbases—112, 115, 118, 124, 130 and 136 inches
Capacity—1,000 to 1,500 Lbs.

With the GREBFORD it is not necessary to cut or disturb the Ford frame.
Shipped all assembled and ready to be instantly installed.
Prices surprisingly reasonable.
Write for literature and trade offer, or ask your jobber.

THE GREB COMPANY

194 State Street

Boston, Mass.



The Liberty Plane Radiator Ornament

The most attractive and most popular Radiator Ornament ever produced. Fits any car, indestructible, solid aluminum, highly polished; wings hand-painted with flying emblem in Red, White and Blue. The slightest motion spins Propeller arm, and makes it almost seem alive. "It fairly hums with Patriotism."

Post-paid \$1.00

Order today and get the Agency

The Defender Auto Lock Company

Fifth Floor, Marquette Bldg

DETROIT, MICH.

REVOLVING CASES!



Especially designed for
garages and service stations

are the only satisfactory way of keeping your repair parts, such as bolts, screws, cotter pins, ball bearings, etc. You can find them instantly and they are protected from dust, rust, etc.

Made in many sizes of best grade materials.

Write for Catalog

**AMERICAN BOLT &
SCREW CASE CO.**
DAYTON, OHIO.

DETROIT DETACHABLE WEATHERPROOF TOP

Recognized as the leader in quality, and manufactured by the largest independent top manufactory in the world. A splendid all-season sales proposition, in strong demand by Chevrolet, Hudson, Ford and Maxwell owners.

The big sales totals and profits hung up by Detroit Weatherproof Body Company Dealers are the talk of many towns. YOU can get information about profit possibilities by writing.

DETROIT WEATHERPROOF BODY COMPANY,
PONTIAC, MICH.

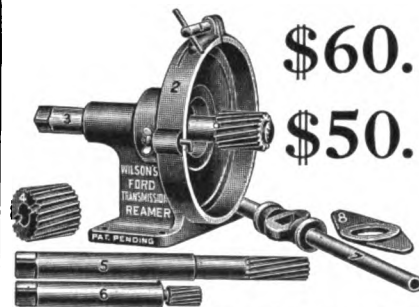
Abide by the President's Message and Conserve Your Nation's Resources



Bale Your Waste Paper—Don't Burn It—Baled Paper is worth real money. Keeps your place clean, sanitary, and the **Safety-First All Steel Balers are Fire-proof.** Prices from \$32.50 up. Write for circulars.

CHICAGO BALING PRESS COMPANY

305 South La Salle Street, CHICAGO, ILL.



\$60.

Complete with triple gear attachment (as shown).

\$50.

Less triple gear attachments.

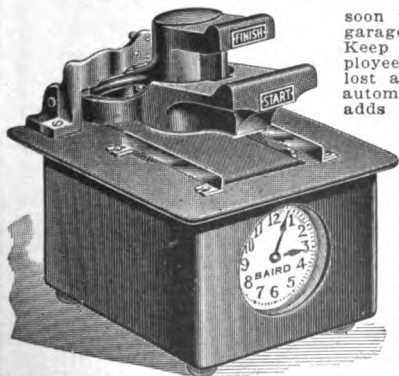
**WILSON'S
FORD
TRANSMISSION
BUSHING REAMING
MACHINE**

The only machine or tool made that will ream bushings in all three drums and triple gears absolutely true to a perfect fit and alignment. 2 minutes labor required to set up and ream one bushing. 25 minutes to completely overhaul a transmission better than you ever did it before. Every job uniform. Saves 75% of LABOR COSTS.

Send for Special Circular of Other Time Saving Tools

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BAIRD TIMING DEVICES



soon pay for themselves in garages and repair shops. Keep a check on your employees' time. A few minutes lost a day through lack of automatic supervision soon adds up into a heavy loss.

Keep track of your repair work. Know how much time each job takes and get your repair charges on a correct and profitable basis.

Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today.

Interesting booklets free!

Baird Equipment Co.

324 W. Ohio St., Chicago
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Single Row Double Row

REGROUND BALL BEARINGS

We will duplicate your worn bearings with reground ones immediately from stock

Steel Balls Thrust Bearings

All Types Roller Bearings Replaced with New Ones

QUALITY **PRUYN** SERVICE

BALL BEARING WORKS

1919 Michigan Avenue

Chicago

Distributors of



FORD Set

12 RINGS

\$7.50

(Write for Discounts)

One piece, Concentric, Leak Tight, "American" Rings are Hammered to test the material and give them a tension which will not be affected by the heat in any motor. Sizes to fit any motor. (Play safe and buy them—Pruyn)

The Garage *and* Shop Market Place

SAVE ON ALL AUTO PARTS

The greatest stock in the Middle West. All parts of all standard makes. Quickest service. Great volume makes it possible to sell to you for—

50 to 75% Less

than NEW PARTS would cost. Only the best parts sold and backed by an iron-clad guarantee.

Our Guarantee: Absolute satisfaction or money cheerfully refunded. For instant service on parts, write, phone or wire—

Auto Wrecking Co. "We Tear 'Em Up and Sell the Pieces"
13th and Oak Kansas City, Mo.

OLD ENGINES MADE NEW

Regrind the Cylinders,
Fit New Pistons,
Rings, Pins.

Write us

BUTLER MFG. CO.
1120 E. Georgia St.
Indianapolis, Ind.

LOWEST PRICES on Good Serviceable PARTS

for all cars.

We are the biggest wreckers in the world. The size of our business enables us to undersell all competition.

Money cheerfully refunded if you are not satisfied.

We make a specialty of our service to the trade and can supply you with practically any parts you want from stock. Orders shipped the day received. Our stock includes motors, Bosch magnetos, coils, magneto parts, rear axles complete with wheels, differentials, tires, rims, and all other parts.

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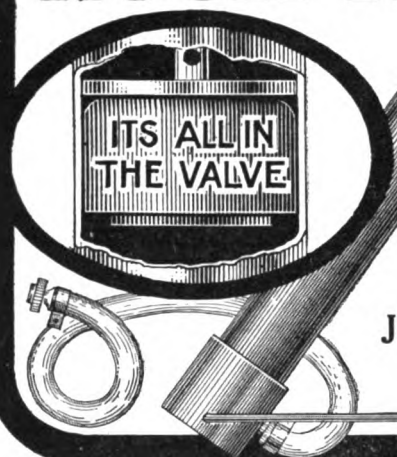
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Keys Piston Ring Co., 3004 Olive St., St. Louis.
Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.
Pruyn Ball Bearing Works, 1919 Michigan Ave., Chicago.

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Flexlume Sign Co., Niagara St., Buffalo, N. Y.

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Harvey Spring & Forging Co., Racine, Wis.
Jenkins Vulcan Spring Co., 1403 Chestnut St., St. Louis.

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Wm. B. Scaife & Sons, Oakmont, Pa.
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WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		J	
Adams & Elting	—	Jenkins Vulcan Spring Co.	10
Advance Automobile Access-	—	Johnson Gas Appliance Co.	—
ories Corp.	62		
American Accessories Co.	59		
American Bolt & Screw Case	—		
Co.	57		
American Machine Products Co.	51		
American Oil Pump & Tank	—		
Co., The	45		
American Technical Society...	—		
Aske Automatic Voltage Regu-	—		
lator Co.	—		
Atlas Auto Supply Co.	—		
..... Inside Back Cover	—		
Auto Cape Top Co.	58		
Auto Engine Works	58		
Auto Salvage Co.	58		
Auto Spring Repair Co.	59		
Auto Wrecking Co.	58		
Automobile Accessories Co.	59		
B		K	
Baird Equipment Co.	57		
Bearings Service Co.	56		
Bermo Co., A. J.	56		
B. & M. Mfg. Co.	61		
Boe Co., H. M.	51		
Breco Electric Co.	49		
Brunner Mfg. Co.	7		
Butler Mfg. Co.	58		
C		L	
Cassidy Co., Edward A.	—		
..... Inside Front Cover	—		
Catelain, Andre G.	58		
Chicago Baling Press Co.	57		
Chicago Solder Co.	55		
Commonwealth Edison Co.	48		
Curtis Pneumatic Machinery	—		
Co.	31		
D		M	
Dearborn Truck Co.	3		
Defender Auto Lock Co.	57		
Detroit Auto Radiator Co.	58		
Detroit Weatherproof Body	—		
Co.	57		
Dunton Co., M. W.	50		
E		N	
Elgin Motor Car Corp.	56		
Ever Tight Piston Ring Co.	45		
F		O	
Federal Sign System (Electric)	48		
Firestone Sales Co.	5		
Flexlume Sign Co. Back Cover	—		
Forbes, J. P.	59		
G		P	
Ganschow Co., William.	55		
Garden City Spring Works.	59		
Globe Mfg. Co.	35		
Graham Roller Bearing Co.,	—		
The	56		
Greb Co., The	57		
Greer College of Motoring.	58		
Groetken Pump Co.	54		
Guarantee Liquid Measure Co.	—		
H		Q	
Haney & Co., J. H.	59		
Harton & Co., Inc., Thos. J.	53		
Harvey Spring & Forging Co.	37		
Haywood Tire & Equipment Co.	8		
Hobart Bros.	53		
Holmes & Bros., Inc., Robert.	54		
Howell Co., The W. H.	53		
I		R	
Imperial Brass Mfg. Co.	—		
Inland Machine Works.	58		
Iowa Novelty & Brass Wks.	58		
J		S	
Jenkins Vulcan Spring Co.	10		
Johnson Gas Appliance Co.	—		
K		T	
Kennedy Car Liner & Bag Co.	59		
Keys Piston Ring Co.	56		
Kimball Tire & Rubber Co.	54		
L		U	
Lawrence & Co., L.	58		
Lawson Co., The F. H.	—		
Lourie Mfg. Co.	56		
M		V	
McDaniel Rubber Co., Leo.	52		
Marvel Carburetor Co.	43		
Marvel Machinery Co.	—		
Martin Rocking Fifth Wheel	—		
Co.	—		
Miami Trailer Co.	8		
Milwaukee Tank Works.	47		
Motor Accessories Corp.	4		
Mueller & Co., R. S.	—		
N		W	
National Cash Register Co.	43		
National Rubber Filler Co.	47		
National Wire Wheel Works.	6		
New York Lubricating Oil Co.	50		
Norma Company of America,	—		
The	9		
O		X	
Olympian-Motors Co.	56		
P		Y	
Pan Motor Co.	—		
Panvar Co.	55		
Pondelick Bros.	52		
Pruyn Ball Bearing Works.	57		
R		Z	
Reliance Co.	52		
Romort Mfg. Co.	41		
Ross-Guold	—		
S		Zinke Co.	41
St. Paul Welding & Mfg. Co.	53		
Scaife & Sons Co., Wm. B.	54		
Shaler Co., C. A. Front Cover	—		
Schrader's Son, Inc., A.	49		
Security Auto Lock Co.	—		
Simplicity Wheel Co.	54		
Sprague Mfg. Co., E. H.	31		
Standard Electric Lamp Wks.	—		
Standard Oil Co. of Indiana.	—		
States Chemical Co.	—		
Sterling Engine Co.	—		
Storm Mfg. Co.	51		
Sunderland Machinery & Sup-	—		
ply Co.	58		
T			
Twitchell Gauge Co.	51		
U			
United Engine & Mfg. Co.	50		
Universal Battery Co.	—		
Universal Industrial Corp.	56		
Universal Tool Co.	—		
V			
Vacuum Muffler Co.	—		
Vanderpool Vulcanizing Co.	55		
Visible Gasoline Dispenser Co.	54		
W			
Wagner Specialty Co.	59		
Warshawsky & Co.	58		
Webber & Co., P. H.	53		
Western Electric Co.	33		
Weston Electrical Instrument	—		
Co.	39		
Wiggins, J. B., Co.	—		
Willard Co., The.	52		
Williams Fdry. & Machine Co.	49		
Wilson, K. R.	57		

REX Automobile Jack for Garage and Private Service

Engineered to Perfection

High Powered, Quick in Action and made to last regardless of Hard Usage.

Because

Constructed entirely from high grade Heat Treated Steel and Malleable.

It rolls on four good strong wheels and a mere boy can lift any car.

Because

As you start to lift the REX rolls under instead of remaining stationary.

Two in One

See the nose which is put there to hook under the axel and Rex Jack it up when the wheel is off.



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No Springs, No Cogs, No Ratchets, but Automatically locks at any height, thus Insuring Safety at all heights.

Glides under the lowest part of any car even though they be equipped with Bumpers or Extra Tires, and raises to a height of 20 1/2 inches without blocking.

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Thousands in use and not a single complaint but Hundreds of Compliments. As a Time Saver it has no equal and will pay for itself any busy week. Ask any user.

Stocked by your Accessory Jobber.

Weight 47 lbs. List Price \$20.00.

SOME DAY YOU WILL BUY THIS TIME SAVER



REX JACK RAISED

B. & M. Manufacturing Co.
5810-14 So. Wood St. CHICAGO, ILL.

Cork Insert

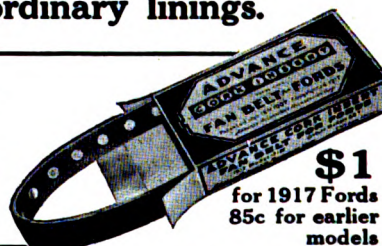
Transmission Lining For FORD CARS

- Stops the grabbing and slipping—the vibration and chattering.
- Requires less pressure on the pedal.
- Makes the Ford brake BRAKE.
- Saves the Ford rear end.
- Outwears several sets of ordinary linings.

\$3
per set
of 3

Keeps the Fan Fanning! Cork Insert Fan Belt for Fords

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for 1917 Fords
85c for earlier
models

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Dealer's Coupon Check and Mail Today!

Advance Automobile Accessories Association
Dept. F7-1, 56 E. Randolph St., Chicago

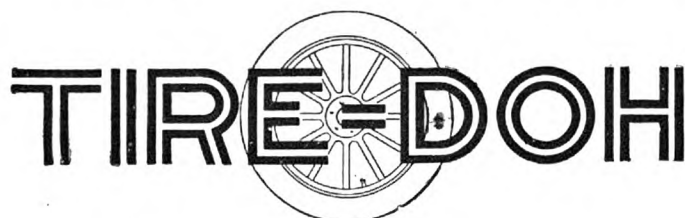
- Enter our order for:
- ☐ Dozen sets of Advance Cork Insert Transmission Lining for Fords.
 - ☐ Dozen Advance Cork Insert Fan Belts for 1917 Fords.
 - ☐ Dozen Advance Cork Insert Fan Belts for 1916 or earlier model Fords.
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City..... State.....
Jobber's Name.....

**Cork Insert
Brake Lining
for All Cars—is Slip,
Grease and Squeak Proof**



**Business Getting Service Helps
make easy sales possible on**



**the Standard Tire Repair Outfit for repairing
Casings, Inner Tubes and all Rubber Goods**

Dealers like to sell it because Motor-
ists know it's the *best*, most *economical*,
easiest to use and *permanent*.

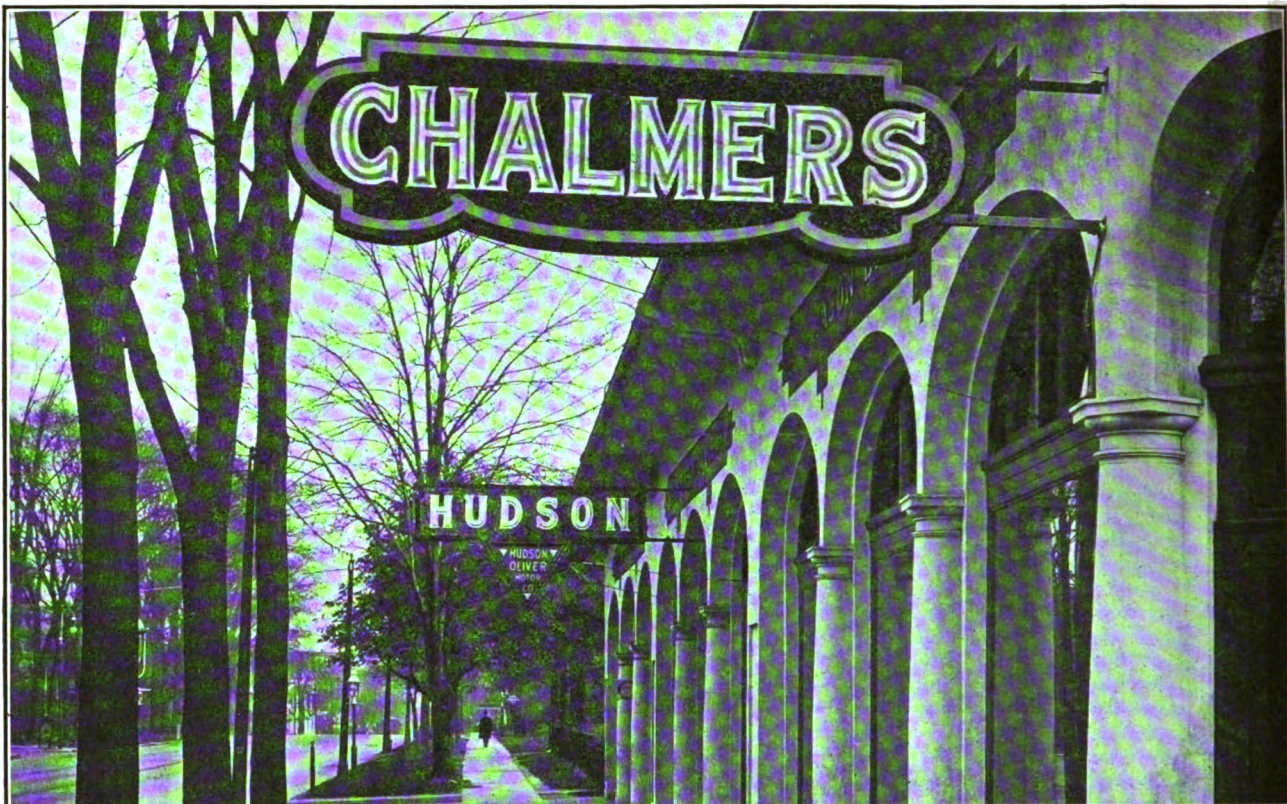
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Get the new hermetically sealed
Tire-Doh Outfits. Good profit.

50c Size—\$1.00 Size

Ask us for our new selling helps.

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CHICAGO, ILL.





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That is why organizations which seek to impress patrons of discriminating taste choose Flexlume signs. They suggest quality.

And for the automobile agency or the garage Flexlumes have an added advantage. By the use of Flexlume interchangeable letters it is possible to change the reading of the sign with little trouble—just take out one set of letters and slip in another. Think of what this would mean should you change the line of cars you are selling.

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(Bear in mind that the cost of the sign will depend upon the size and number of illuminated letters used.)

Signs should read, illuminated.....

.....
Wordings not illuminated.....

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Vertical or horizontal?.....

NAME

ADDRESS

A. G. & A. D.

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Or at least let us send you the Flexlume book "Twenty-four Hours a Day" which tells about Flexlume signs in general.

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Pacific Coast Distributors: Electric Products Corporation,
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AMERICAN GARAGE & AUTO DEALER

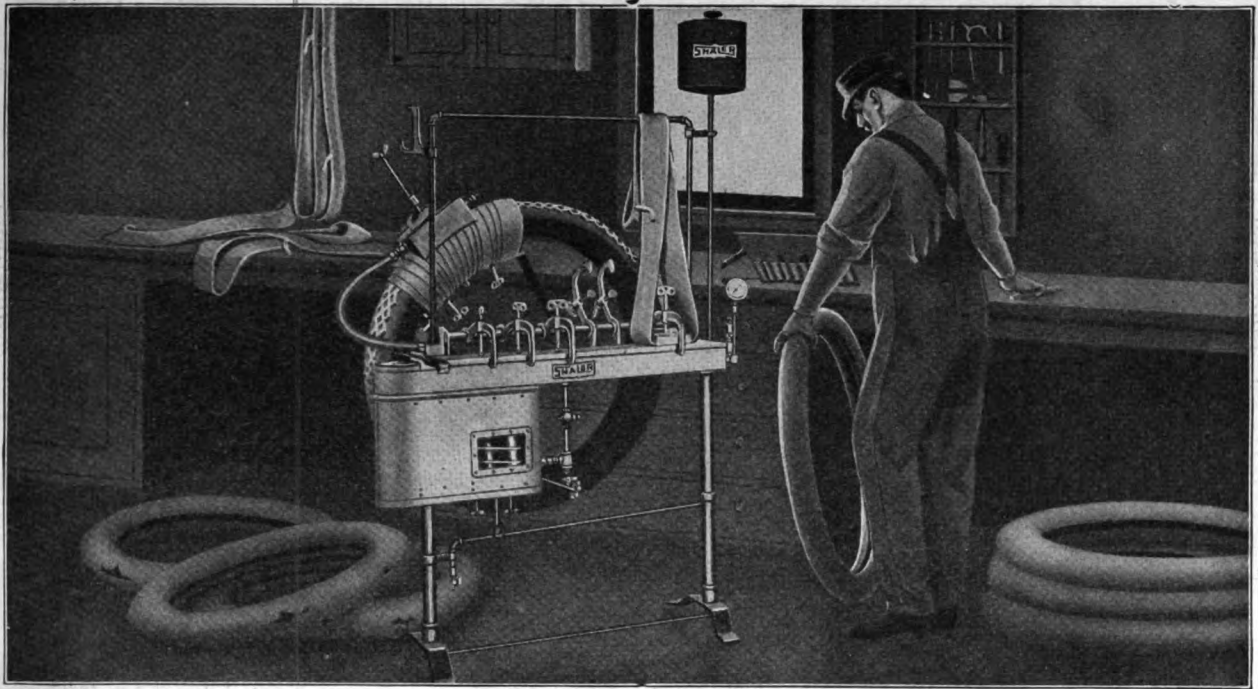


Published Monthly
Vol. 9 — No. 7

CHICAGO, ILL.,

JULY, 1918

10 Cents the Copy
\$1.00 Per Year



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By the new SHALER Wrapped-Tread Method, casings are mended quicker, better and at less cost to you than with other vulcanizers using the old method.

The SHALER Vulcanizer has thermostatic heat

control, which regulates the temperature automatically. This makes an explosion impossible, prevents overheating or undercuring the tire—and leaves you free to devote your entire time to repairing.

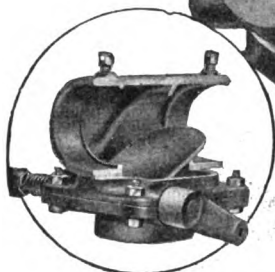
Any style or size of casing or tube can be repaired. The SHALER Vulcanizer occupies no more space than a bicycle, and can be moved about easily. Other models for gas, gasoline or electricity—to suit your shop.

Sold by All Jobbers—Write for Catalog

Write your jobber for full information, prices, etc., or send to us for catalog and complete description of the SHALER line of Vulcanizers for motorists and tire repair shops—sent FREE on request.

C. A. Shaler Company, 357 Fourth Street, Waupun, Wis., U. S. A.

Sectional view
showing patent-
ed gas-tight
tongue - valve
open



*"Tells
the motor's
Secrets"*

Makes the motor speak right out

Smooth, even explosions in your motor mean real power, fully delivered. To keep your motor running sweetly, listen for any irregularities and correct them before they result in a waste of power.

The G-P Muffler Cut-Out throws up the sound of the motor. In an instant it shows whether

power is being wasted. Power is precious. You can't afford to let it go to waste.

The G-P Muffler Cut-Out is made so that exhaust gases escape readily. With it there is no possibility of back-pressure. Made in two parts, it is easy to inspect. Free egress of exhaust gases prevent carbon accumulation. You will save power with a G-P Muffler Cut-Out.

The G-P MUFFLER CUT-OUT and G-P PEDAL



The G-P Pedal is made entirely of steel, and is strong enough to operate any cut-out spring. The geared compound leverage makes it easy to operate.

Compounding of leverage and geared parts allows installation in minimum space. Its installation requires but one small hole

drilled in floor board. The locking device is on the bottom plate, so the pedal can be fastened to a steel or wood floor board of any thickness without altering its throw.

By releasing one screw the G-P Pedal can be changed to lift or pull in any direction. Operates any cut-out easily.



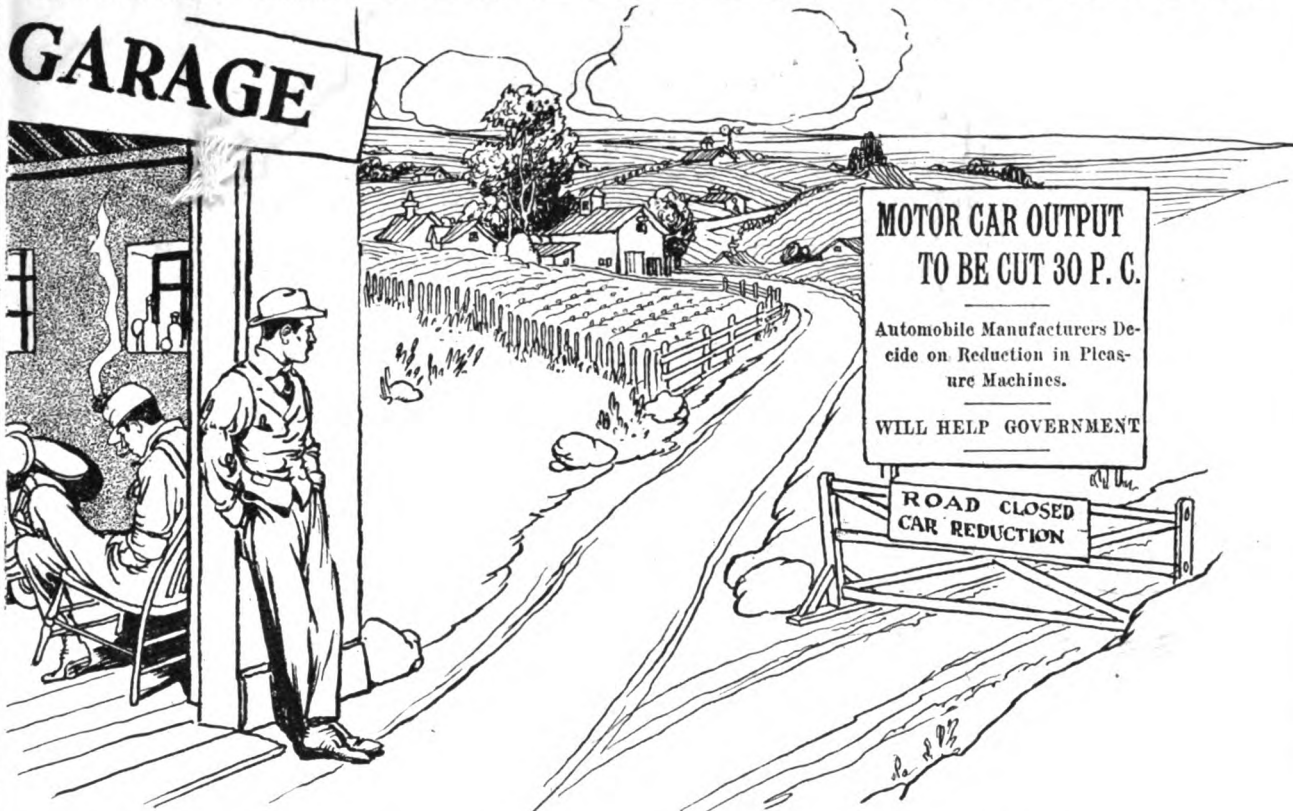
Sales Department

EDWARD A. CASSIDY CO., Inc.,

285 Madison Ave., New York City

Manufacturers: The G. Piel Co., Inc., Long Island City, N. Y.

DEALERS AND GARAGE OWNERS— TAKE THE OPEN ROAD TO PROFIT



What if your sales of cars are falling off? Don't worry.
You must and can keep on doing business at a profit—
By selling

Western Electric POWER AND LIGHT

Labor on the farm is hard to get and still harder to keep. Electric power and light—the Western Electric kind—is the answer. It is being advertised in the Saturday Evening Post and advertisements in 20 of the leading farm papers. You can easily get your share of the business.

THE TERRITORY IN WHICH YOU
LIVE MAY BE OPEN

Mail the coupon and get the full
details

Western Electric Company

Dept. 721., 195 Broadway, New York

1918

I am interested in learning more about your
sales agency proposition, and how I can sell
Western Electric Power and Light.

A.G.A.D.

"You don't have to buy from us, but you will"



Mr. Dealer and Garageman

If you assure the Automobile owner, throughout the country, that he can purchase all of his accessories through a well-organized chain of retail stores and that he will receive uniform quality and product without substitution or delay, he will become a customer of yours.

Retail chain-store corporations, as you know, are successful in every line.

Our business is the Automobile Accessory Business and is founded upon and governed by the methods which have been successfully employed in other industrial lines. These methods protect those who become one of us and elevate the motor accessory field to a plane approaching perfection, finally resulting in satisfied dealers and consumers.

Our Policy is

ECONOMY, EFFICIENCY and BETTER SERVICE

If you want to know what is necessary to become one of us—

If you want to know what you have to do to become one of us—

If you want to know why it will pay you to become one of us—

If you want to know what we do for you when you become one of us—

If you want to know how we increase your business—

If you want to know how and why our name will become a home-word to the motorists throughout the country—

If you are the man with enough foresight to grasp an opportunity and take advantage of it when it is presented to you—

Write Us for Further Information

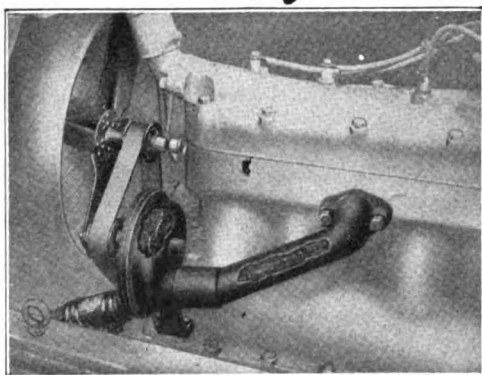
MOTOR ACCESSORIES CORPORATION

H. J. Curtis, Genl. Mgr.

170 Broadway, New York

"You don't have to buy from us, but you will"

**You'll have no dull days if you
sell FIRESTONE ACCESSORIES!**



FIRESTONE FORD CIRCULATOR

For Ford cars, tractors, or trucks. We guarantee this centrifugal circulator to keep the motor so cool that you can lay your hand on the radiator after running several hours idle. Saves its small cost to the car owner in lubricating oil alone.

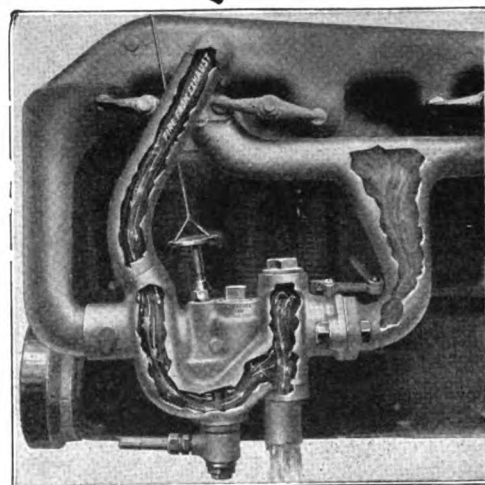
Eliminates the pounding from the motor and decreases carbon trouble.

Easily installed on any Ford.

Retail price, \$9.00.

Liberal profit to dealers.

Firestone Sales Company
1806 Michigan Ave.
Chicago, Ill.



GILSON FIRESTONE CARBURETOR **31 Miles Per Gallon**

Adds many times its cost to the value of any car. This carburetor burns kerosene better than any other carburetor burns gasoline. It also will burn kerosene, distillate or gasoline without any readjustments.

Price Complete, Ready to Install, Carburetor for Gasoline only, **\$18.00.**

Carburetor for Kerosene (coal oil), including extra tank and water circulator, **\$30.00.**

A big seller for the trade.

DEALERS—Send in this Coupon today.

Firestone Sales Co., Date.....
1806 Michigan Ave., Chicago, Ill.

Please send me literature, dealers' discounts and sales plan on the

Firestone Ford Circulator.
Gilson Firestone Carburetor.

Name

Address

City....., State.....

WIRE WHEEL RESILIENCY

makes traveling on the old-style wooden wheels suffer in comparison. If, while riding in a wire-wheel equipped car, you have had your eyes and ears open, you doubtless will have noticed a springy, velvety sensation that seemed a very luxury, compared to the bouncing, jarring motion produced by solid wooden wheels.



PASCO Wire Wheels have the staunchness, and yet the springiness, so necessary to riding comfort.

Without undue boasting PASCO'S distinctive features have made the PASCO wheel a standard of comparison—not only for pleasure and delivery cars, but for aeroplanes as well.

It will pay you to learn the facts about PASCO Wire Wheels.

DEALERS: Write for interesting sales information.

NATIONAL WIRE WHEEL WORKS, Inc.

Dept. G, GENEVA, N. Y.

Service Stations in Principal Cities

RESULTS—The Reward of Thought and Preparation

Results are the object of all our efforts, and are only secured after much thought and preparation. Applying this to your garage business, patronage and profits are secured only after knowing what the motoring public demands, and preparing to meet their demands. You will agree that the motorist demands clean gasoline delivered in a quick, efficient and convenient manner. Meet this demand by installing

AMERICAN GASOLINE and OIL STORAGE EQUIPMENT

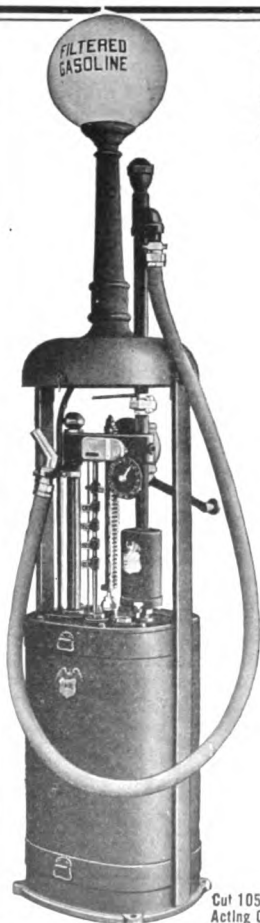
and handle your gasoline and oil in the approved and up-to-date manner.

Write for bulletin giving complete information, prices, etc.

Salesmen wanted—good territory open

AMERICAN OIL PUMP & TANK CO.

Cincinnati, Ohio



Cut 105—5 Gallon Double Acting Curb Pump.



Cut 101—1 Gallon Double Acting Curb Pump.



Globe Air Compressors distinguish your garage as a "Leader"

IF you will stop to consider, Mr. Garageman, the vital necessity of investing your money in **quality** equipment, there is only one compressor you will buy—GLOBE.

GLOBE Air Compressors are recognized throughout this and other countries as dependable, economical and efficient equipment. GLOBE Air Compressors enjoy a reputation for giving service, for saving money, for **satisfying**.

There are many **exclusive** features to GLOBE Compressor Equipment; features you cannot secure in other equipment; features that you want in a compressor.

GLOBE Air Compressors are made in all sizes to fit the needs of every place of business, and when you buy GLOBE equipment you have the satisfaction of knowing that you are buying **the best** at no greater cost than other equipment.

Get Ready Now for the Busy Motoring Season

Install that compressor and be in position to give your customers the service that pleases; the service that brings them back to your place of business when they want to spend money. **DON'T DELAY.**

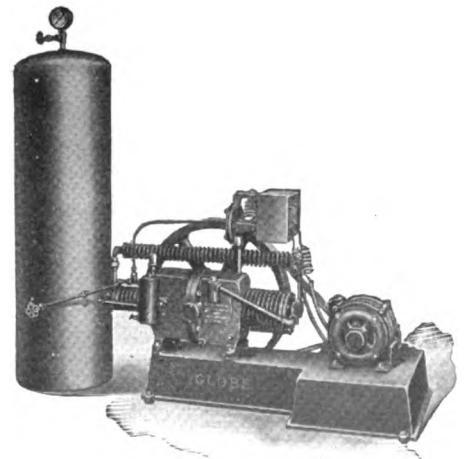
Write us your needs and let us quote you money saving prices on your equipment. Let us show you why you should buy GLOBE Compressors.



GLOBE Portable Automatic Air Plant

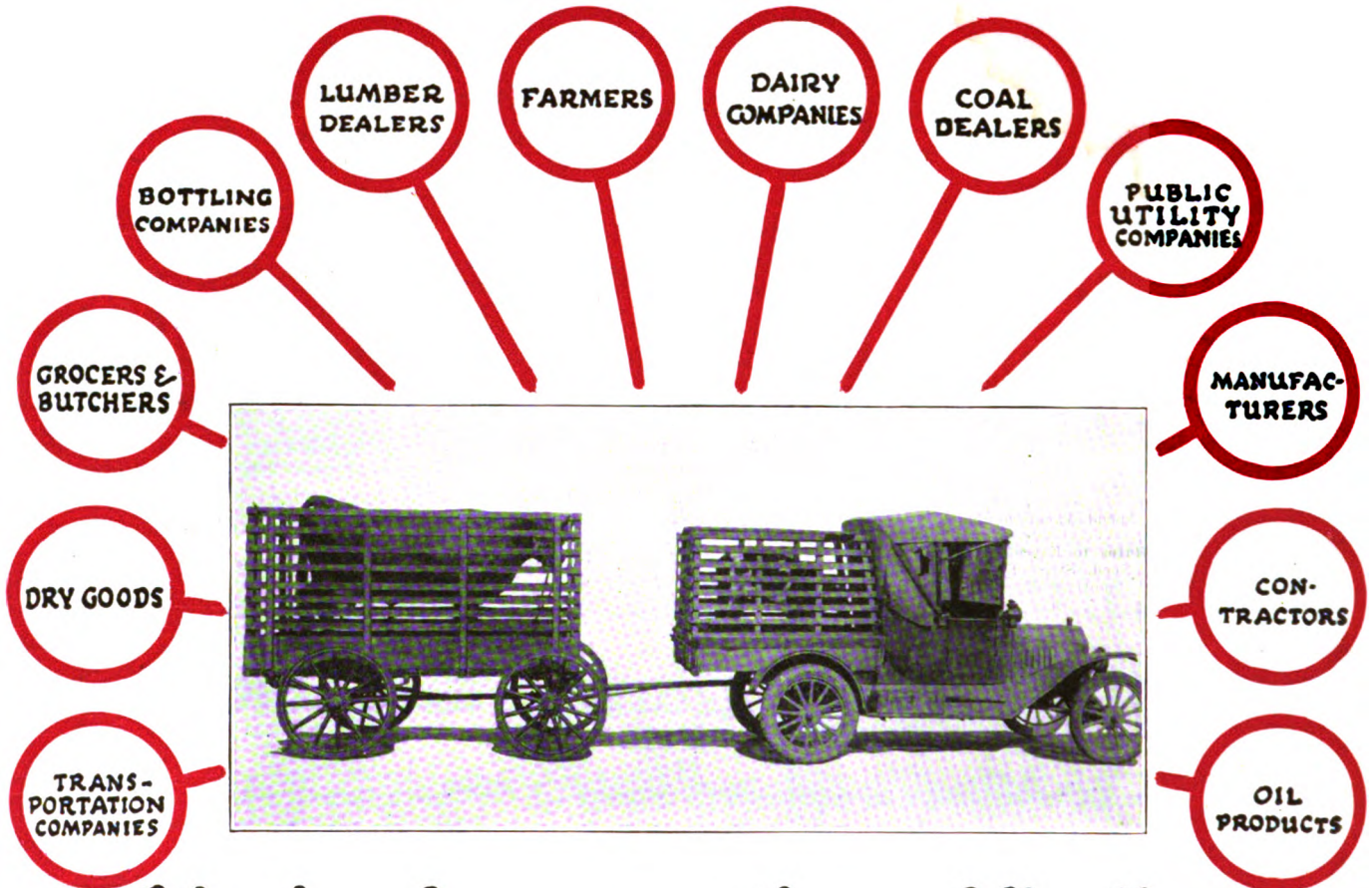
Your inquiry to Department B-2 will bring you interesting literature free. Ask for it.

**Globe
Mfg. Co.**
Battle Creek,
Mich.



Type B Two Stage Automatic Air Plant Complete with Tank

You have an astonishing number of prospects for MIAMI TRAILERS!



It's simply a question of finding the RIGHT dealer. ARE YOU THAT DEALER?

If you feel that YOU are a logical MIAMI dealer, write us immediately. Now's the time to make "substantial profits" selling MIAMI TRAILERS. The opportunities are all yours—you can sell as many as you want, and you can get as many as you sell. **You have an astonishing number of prospects for MIAMI TRAILERS.**

Another advantage in selling MIAMI

TRAILERS now is that it is practical "war time economy." A MIAMI TRAILER is not in the luxury class—it's a necessity, and a great time saver. Neither does it represent a burdensome investment such as a motor truck or pleasure car. MIAMI TRAILERS are made in a number of styles and prices—**anybody can afford a MIAMI TRAILER.**

If you measure up, wire or write at once

Let us send you further particulars as to what other MIAMI dealers are doing 

MIAMI TRAILER COMPANY
TRAILER STREET—TROY—OHIO

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

New Profits for Old.....	24
Drafting the Motor Truck.....	24-25
Hope for Road Betterment.....	25

GENERAL

As a Man Thinketh So Is He.....	11
I Wonder How the Other Fellow Does It.....	12
What Does Your Banker Think of You—As a Business Man.....	12-40
Trailer and Truck-Maker Called Twin Aids to Dealer Prosperity.....	13
Chicago's Pier Appropriate Place for Great Automotive Exposition.....	14-15
Accessories.....	16-17
Jenkins Spring Easels Help Make Sale Profits.....	17
District Men Aid in Selling Convertible Body.....	17
Radiator Service Emblem Now Put on Market.....	17
5,000 Members in 90 Days Goal of National Dealers' Body.....	18-21
Progress or Retrogression, by R. M. Fowler.....	19-22
Good Business Announcements Do Not Always Need Big Space.....	20
Hurry Your Advertisement Along, the Contest Closes August First.....	21
Simple Driving Signals Suggested by Big Automobile Manufacturer.....	22
Handling the Nation's Work (Cartoon).....	25
\$5 for Window Display Pictures Is an Easy Way to Make Money.....	26
A Novel Way to Spend Vacation and New Method of Advertising.....	27
Raised Railroad Rates to Extend Use of Automobiles.....	27
Growing Gasoline Need, Strict Economy Asked.....	27
Military Need of Country's Roads Recognized by Government Board.....	28
Bright, Clean Showroom a Factor in Profitable Used Car Business.....	29
Jobbers Elect Members and Donate to Red Cross.....	29
Good Bookkeeping System a Need When in Business for Profit.....	32-33
Master Truck Men Enlist.....	33
Ohio Convicts Employed Building Military Roads.....	34
Kerosene Equipment Co. Elects New Directors.....	33
"Modern Motor Car" Coming in New Edition.....	33
Northwestern Chemical Co. Increases Capital Stock.....	33
Electric Signs Help Government and Business Men in War Time.....	36
Bearings Service Company Has Facilities for Rim Users.....	38
Shaler Official Organizes Baseball League in Waupun.....	38
It Pays to Advertise.....	38
Identification Plan Proposed to Eliminate Stealing of Cars.....	40
Some Shaler Business Verse.....	40
Columbus Tractor Co. Succeeds McIntyre Firm.....	40
Japan Subsidizes Motor Cars.....	40
Return Loads Bureaus Needed in Cities All Over the Country.....	48

DEPARTMENTS

How to Make the Shop Pay.....	23
Welding, Cutting and Brazing.....	30-31
Mechanical and Engineering Problems.....	34
Accessories and Garage Equipment.....	42-44
Buyers' Reference.....	60
Index to Advertisers.....	61

American Garage & Auto Dealer, Inc.

General Offices:

116 S. MICHIGAN AVENUE
CHICAGO, ILL.

Krege Building,
Detroit, Mich.

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E. T. CLISSOLD, *Vice President*
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"NORMA" PRECISION BALL BEARINGS

(PATENTED)

Service—that's what the buyer of a car or truck pays for. Its value to him lies in the measure of the service it renders. And this service must be a thing inherent throughout the machine—not merely in body, chassis or engine, but in every minute detail entering into their construction and equipment.

No part of the equipment is more vital than the magneto and lighting generator. And no part of these accessories is more vital than their bearings. Wherefore—makers of high-grade, responsible magnetos and lighting generators have standardized on "NORMA" Precision Bearings.

Be Sure—See That Your
Electrical Accessories
Are "NORMA" Equipped

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.

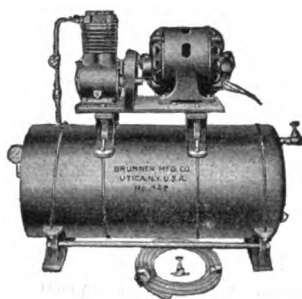


Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



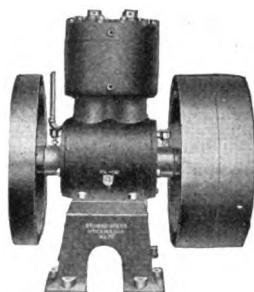
*"The Garagemans OK"
is behind the Brunner Sign."*

The Brunner Sign has been consistently demonstrating its wonderful advertising value to the garageman for many years. Thousands of garagemen who have been rendering Brunner Service and have been advertising the fact by displaying the Brunner Sign know that the Brunner Sign is recognized by the Brunnerwise motorist as a sure sign of a compressed air service that always satisfies.

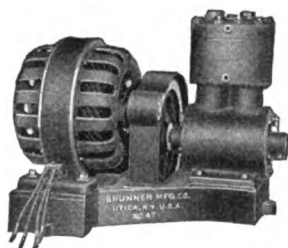


Install a **BRUNNER** Air Compressor

Just now in these war times labor is scarce and labor saving equipment is playing a big part in the economical administration of every business.



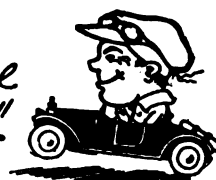
A Brunner Automatic Air Compressor would save you many hours' time each week because it is a high class, thoroughly dependable equipment that delivers the goods—it requires no attention whatever aside from an occasional oiling, and automatically maintains an adequate supply of compressed air continuously—no waiting—no complicated attachments to help motor carry the load—no restriction of the lubrication.



YOU CANNOT GO WRONG WITH A BRUNNER AIR COMPRESSOR, because every one sold is backed up with the guarantee of the manufacturer as well as the Brunner Jobber that it will do the work for which it is recommended and that it will be found exactly as represented.



*"The Motorist who is Brunnerwise
knows Brunner Service Satisfies"*



Write for No. 15 Catalogue and the name of the Brunner Jobber covering your territory. Get acquainted with the Brunner line.

BRUNNER MANUFACTURING COMPANY

General Office and Plant
UTICA, N. Y.

Cincinnati Branch
CINCINNATI, OHIO

AMERICAN GARAGE & AUTO DEALER

Comprising
AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX, No. 7

CHICAGO—Detroit—New York

July, 1918

As A Man Thinketh So Is He

"James Allen."

All that a man achieves, and all that he fails to achieve, is the direct result of his own thoughts.

Your success as an automobile dealer or as a garage man represents the complete sum of all your thoughts and actions.

You can only rise, conquer, and achieve, by lifting up your thoughts. You are made or unmade by yourself. When you *discover* yourself—your powers—your ability—you *will* become a more successful automobile dealer or garage man.

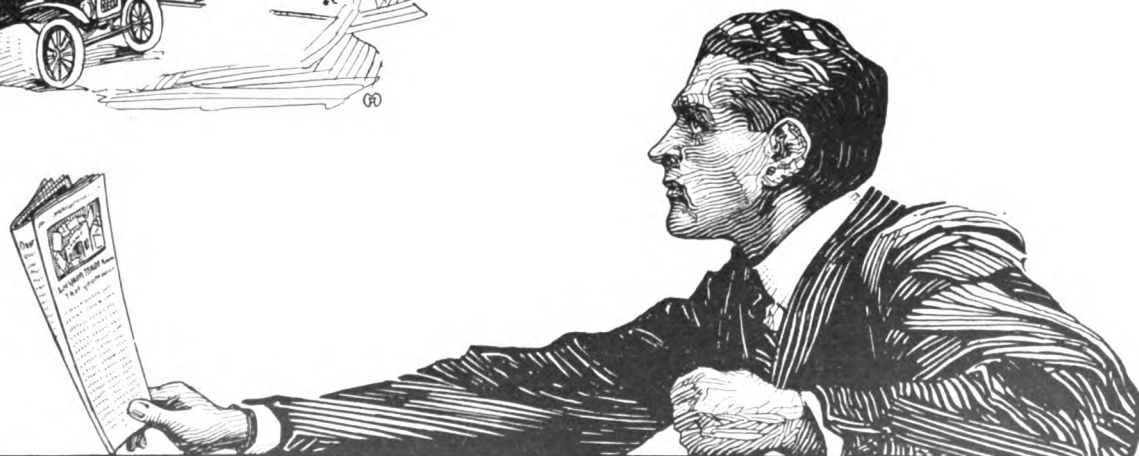
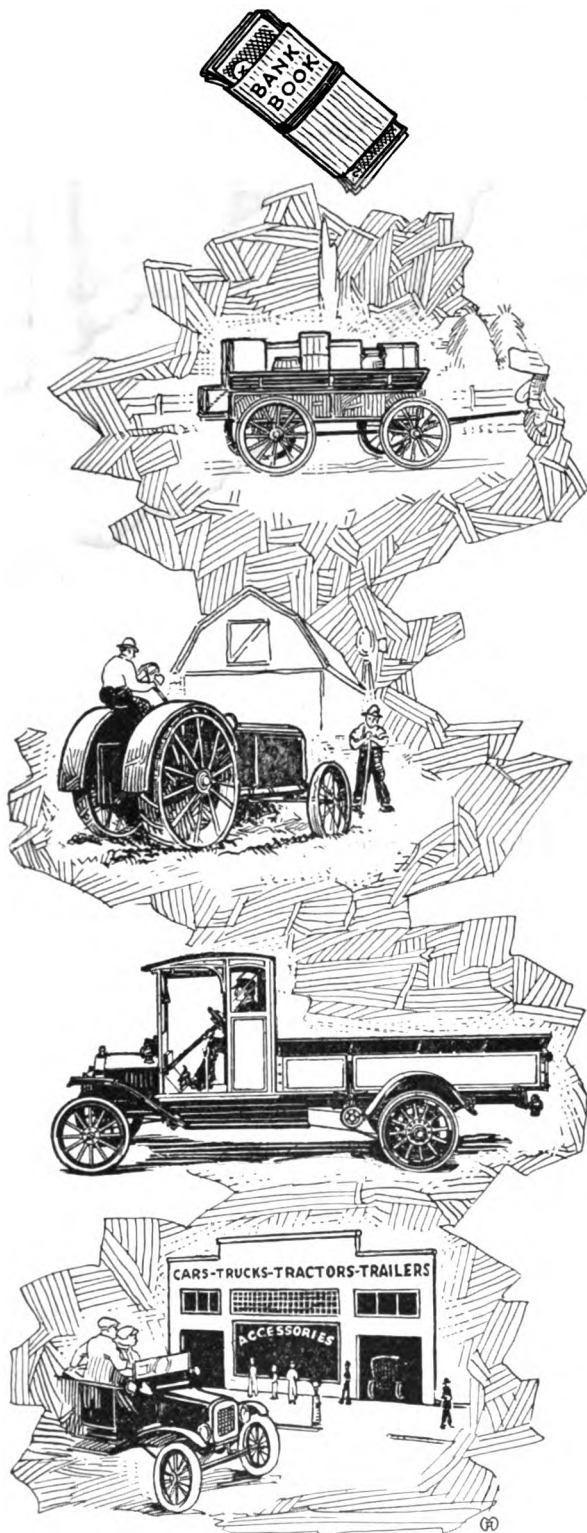
You will only get that which you justly earn.

Before your customers will have confidence in you, you must have confidence in yourself.

The world is your kaleidoscope, and the varying combinations of colors which at every succeeding moment it presents to you, are the exquisitely adjusted pictures of your ever moving thoughts.

Think always of the welfare of your customers, and in return they will think of YOUR welfare.

The dreamers are the saviours of the world. So, if you would succeed—*dream*—and think how you can make your business **BIGGER** and **BETTER**.



I Wonder HOW the Other Fellow Does It

"I wonder how the other fellow does it?"

Possibly you have asked yourself that question time and time again. No doubt, way down in your heart you would gladly give "a penny for the other fellow's thoughts"—the man you envy down the street, who is making a success of his business. If you did stop once in a while and wonder how the other fellow cashed in—perhaps it would be a good thing for you to do.

In one of our central states a man had been struggling for several years with an old farm which he inherited. It was a sandy, rocky, hilly piece of ground and he was not able to make it pay. Finally he gave up in disgust and sold the place for a song. The buyer went over the farm foot by foot, and determined what each acre was best suited for. He planted orchards on the hillsides. He found that certain kinds of berries thrived in the sandy places. A certain section of the tract that seemed irredeemable was fenced off into a permanent pasture. In a word, every rod of the farm was turned to some good account. In half a dozen years the new owner made the old place the most beautiful and one of the most profitable farms in that neighborhood.

Instances of this kind are continually occurring in every line of work. *One man finds a rich lode of possibilities in the very ground that some one else passes up as worthless.*

Many other automobile dealers, garagemen and repairmen have been in the same predicament as you. When they discovered the reasons underlying success, and took an inventory of their business methods, they

too gave the old place a few coats of paint, discarded some of their antiquated business stunts, put pep into their business, added to their stock of accessories, took on a trailer, truck and tractor agency—and *cleaned up money!*

Many interesting stories could be cited of men and firms who had the first chance and the big opportunity, but who passed it up to their competitors, just because they would not adopt the proper kind of business methods—in other words, methods that "win business."

The other fellow succeeds because he is observing, alert, eager to learn, pleasant, up-to-date, obliging, fair—"he always has a smile." He's the man who is glad that he is a small-town dealer because he has *unlimited business opportunities*. Here are the reasons:

(1) Farmers have more money to spend than any other class of people.

(2) The farmer's buying power is steadily rising as the city man's is shrinking.

(3) Everybody has been after the city market. The farm market is comparatively free from these costly sales obstacles.

(4) The farm market, moreover, will be the best post-war market because farmers will have been least affected by the costs of war.

Just as soon as a man is willing to admit that he does not know it all, then he is placing himself in position where he can learn more. And it proves to be a very wise automobile dealer, garageman, or repairman who will frequently take stock of himself, and of his competitor.

What Does Your Banker Think of You—As a Business Man?

BY J. C. KELSEY,
Vice-President,

Rogers Park National Bank, Chicago.

"Money makes the mare go."

Just who said this originally or when it was said is not material but the fact remains that the author must have been a business man.

Business is a great deal like swimming, which as long as one pays attention to his normal business, he can keep afloat, but there are times when the strongest swimmer will drown unless immediate help is at hand.

It does not matter how large or how small the business is, how much stocked in materials and merchandise,

or how large the bills receivable may be, there are always times when conditions arise which may lead to bankruptcy and ruin.

And just as the swimmer, in peril of his life, if no one rescues him, so will the business die if someone does not come to the relief of it with money.

Every successful business man has seen the time when he and his associates passed long, sleepless nights, pondering over obligations which had to be paid, and if not paid, all the work of a lifetime would pass into the discard.

One of the most successful business institutions in

(Continued on page 46.)

Trailer and Truck-Maker Called Twin Aids to Dealer Prosperity

By Selling the Combination Tradesman Benefits Buyer and Himself from Furnishing Most Economical Haulage

By **GEORGE W. HIPPLE**

General Sales Manager

Redden Motor Truck Company, Inc.

Now that the authorities at Washington have shown a disposition to impose a tax of 20 per cent on what they style "pleasure cars," automobile dealers must prepare to make at least some profits from other sales than passenger cars.

With the example of what has happened in England and France before us, there can be no question but that the pleasure use end, or phase, of the passenger car business is due for a terrible wallop.

I have heard that in England, where for a time motorists were permitted to run their vehicles by using illuminating gas—carried in huge bags—that now the regulations are steadily becoming more rigorous. We have a great source of gasoline in this country, so perhaps need not worry now about fuel. But the fact remains that the government officials seem to regard most all of the passenger cars as "pleasure vehicles" and would tax their use as luxuries.

There have even been, it is said, proposals made to impose the same 20 per cent tax on trucks, trailers and truck attachments. While this is high, compared with former tax rates, users are more likely to pay up than not as they buy trucks, trailers and truck attachments to hasten and assure the delivery of merchandise. Such a tax, it seems to me, would have more effect on the sale of passenger cars than on that of the business vehicles.

I firmly believe that the best thing for automobile dealers to do right now is to sell trailers as well as truck makers. Trailers and truck makers look to me like twins that should not be separated in the minds and selling campaigns of motor tradesmen.

If the proposed high tax is imposed, my argument still holds good. A trailer can, and will, haul twice the load carried by the truck itself, at a slight extra expense—but the initial cost of the trailer is far below that of any kind of a truck.

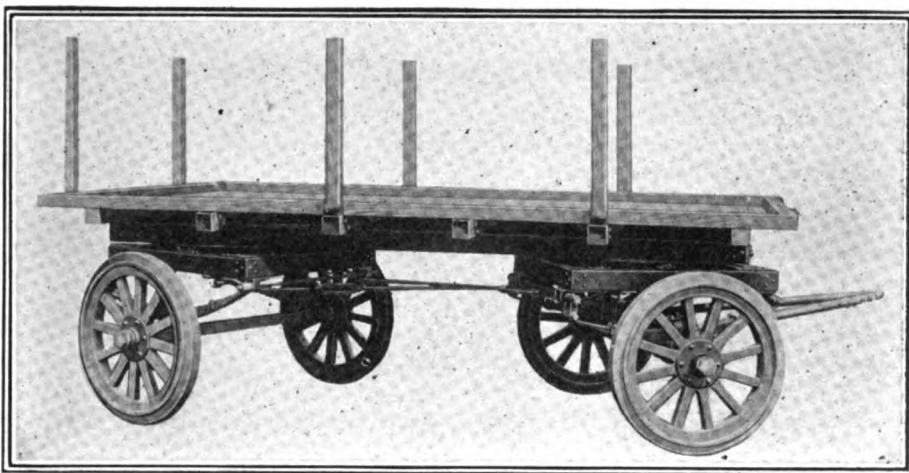
Trailers Are Economical.

Trailers are economical of both time and running expense. Not having any power plant or transmission their first cost is low and they haul their loads behind a motor truck at a small additional expense. They effect a double saving, in that they cost but little more to haul and easily carry twice as much as the hauling vehicle.

Perhaps the greatest advantage of

month. Without a trailer it is necessary, in such a case, to buy and maintain all the rest of each month, a truck big enough to haul the occasional heavy loads. But a light truck—made of an old passenger car power plant and a truck maker—will do all that is needed if a comparatively inexpensive trailer is added to the hauling equipment.

During a recent trip to Saskatchewan, Canada, I was impressed by the number of cases where trailers could be used to advantage by farmers. In hauling their grain to the railroad it seemed that the average length of the trip necessary was nearly 20 miles. Using a truck alone, each farmer



New Redden Trailer.

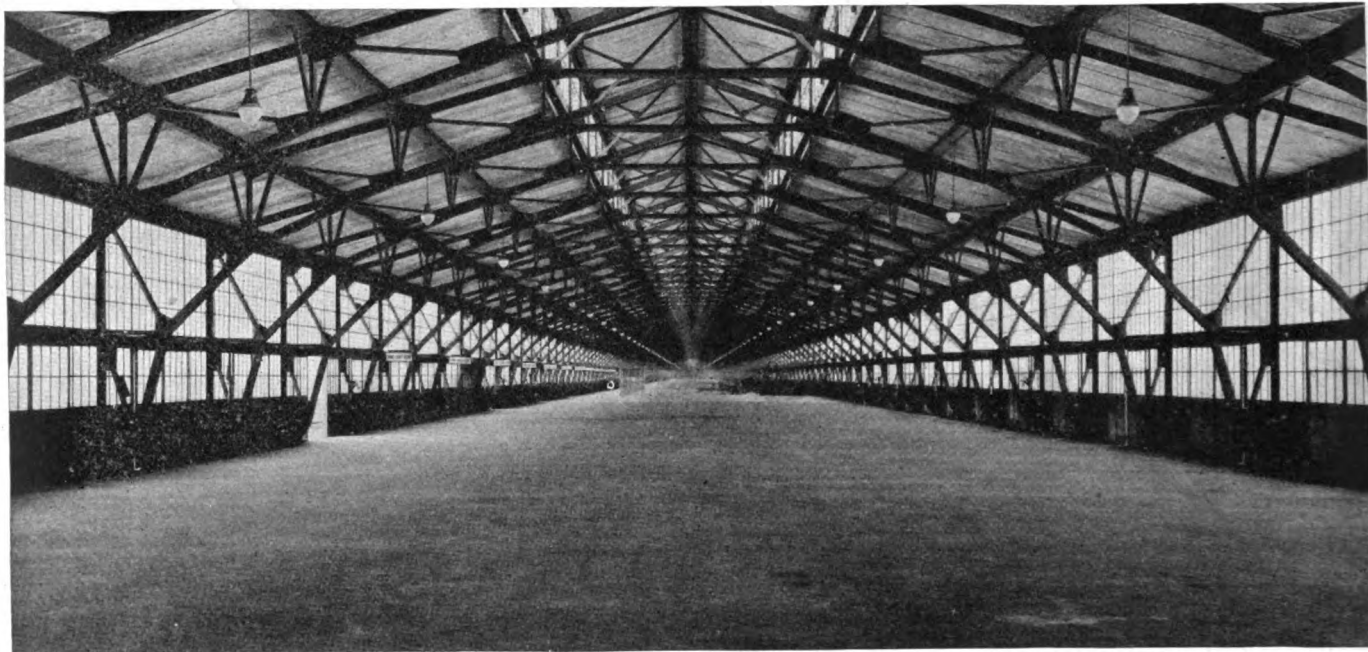
trailers is that they can be loaded and unloaded while the hauling truck is away somewhere else, delivering goods in its regular accustomed manner. Take their use for hauling lumber, which must be loaded and unloaded slowly and carefully. Every idle minute of a motor truck is expense to the owner, according to the price he paid for it.

Trailers have a place in the use of firms and individuals who have heavy loads to be carried once or twice a

could haul only a third of the aggregate load he could transport by adding a trailer.

A trailer does not require the services of another driver, a big factor in these times of labor shortage. Our company is going into the production of trailers as we believe it is a necessary business.

And remember—EVERY PRESENT OR PROSPECTIVE OWNER OF A TRUCK IS A TRAILER PROSPECT.



View of Automotive Exposition Hall, 2340 by 68 Feet.

Chicago's Pier Appropriate Place for Great Automotive Exposition

Tractors and Trucks---Modern Engines of Warfare---to Be Displayed Along with Many Kinds of Accessories for Cars

Chicago's great Municipal Pier—the largest and finest recreation pier in the world—is a particularly appropriate place to hold the Automotive and Accessories Exposition in September. For, as several speakers pointed out at a great get-together meeting the other day in Chicago this Automotive Exposition which opens September 14 will fit very well in patriotic keynote with the previous uses to which the pier has been put.

Built as a recreation pier and convention headquarters, with no thought of war uses, the pier was thrown open during the terrible hot spell of 1916, when hundreds of thousands of sufferers crowded its broad promenades and literally gasped for the breath of life. It paid for itself that first summer in lives it saved.

Early in 1917 Uncle Sam went to war, and he needed engineers, and needed them quickly. Of course, they had to be organized before he could send them abroad, even though one American engineer as man to man could whip three Huns. So the pier was pressed into service as headquarters and drill ground and army station.

The engineers had hardly left for France when the Navy took over the pier and turned a part of it into a naval training station for ensigns and quartermasters.

Many of the pier graduates are in the thick of it now, on transports, liners, subchasers, destroyers, and coast patrols. New recruits are being received constantly at the pier, and finished sailors are being sent, after a period of training on the Great Lakes, to the seaboard.

Show Engines of Warfare.

And now the pier will house not only engineers and sailors, but engines of warfare—American tractors which are helping to increase the food production so vital in winning the war, and American trucks, which are sweeping America's products to shipping ports, regardless of railroad congestion.

Out of town visitors will find the pier one of the most fascinating places they have ever visited. The Automotive Exposition will, of course, be extremely inspiring in itself, and then there will be the sight of our blue-jackets preparing for service on the high seas, the old U. S. S. Commodore moored as a training ship, the U. S. ships Gopher and Hawk swinging at anchor in the harbor off the pier, the procession of lake vessels—ore boats, freighters, passenger steamers, car ferries—leaving and entering Chicago harbor for Milwaukee, the "Soo," for Michigan ports, and for distant ports on all five of the Great Lakes.

Turning toward shore from the distance of almost a mile out over Lake Michigan—the wonderful convention hall or auditorium is nearly a mile from the shore end of the pier, and is reached by street cars—the visitor on the pier will see Chicago's picturesque skyline, sky-scrappers, big and dominating, holding up their towers toward heaven as though giving reassurance that America with her men and her commerce and her agriculture must soon crush the ruthless foe.

Exposition on Big Scale.

Ever since the Municipal Pier opened it has been one of Chicago's principal show places. Visitors are astonished at its immensity. It is three times the size of the famous Young's Pier at Atlantic City, and has a larger floor space than Chicago's famous Coliseum and Armory combined.

All the available floor space of the great pier will probably be pressed into service by manufacturers of trucks, tractors and accessories before the Automotive and Accessories Exposition opens September 14, demands having been made already on the original rental of 150,000 square feet, and the Chicago City Council has been appealed to for rental of the remaining 100,000 square feet not required by the Naval Training School.

In addition to all this floor space—the truck and tractor exposition management has leased the great auditorium at the far end of the pier for the duration of the exposition. This space will be donated to several conventions holding their annual meetings in Chicago at the time of the Automotive Exposition.

A "Land" Show on Water.

The exposition of trucks, tractors and accessories which will dedicate Chicago's pier to show uses, will be in every sense of the word a land show on water, for there is nothing of greater importance to the land—to the agricultural communities—than the speedy development and general distribution of tractors and trucks. Tractors increase acreage and save labor. Under the present abnormal conditions brought about by the war—an actual shortage of labor and unprecedented demands for farm products—the tractor is playing a part never dreamed of even by tractor inventors, a few years ago.

The same holds true of trucks. Trucks have been adopted by the governments of all the allied countries, not only near the front to move men and supplies needed by troops engaged in fighting, but to help speed up business all along the line. In this country the government has sent great quantities of supplies from inland points to shipping ports on motor truck trains. Trucks are no longer confined to the retail delivery, or to hauling in the city. They are being used on cross country runs to help out the overcrowded railroads.

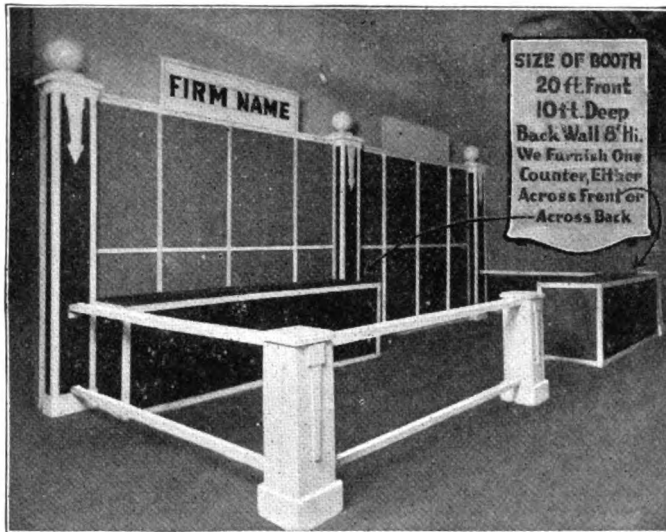
All the latest developments in trucks and tractors will be shown at the Automotive show on the pier. And accessories will be displayed to show how to get another life out of the old passenger car, for just as the government has discouraged the production of passenger cars on a before-the-war scale, so it has become more important to make every old car perform the absolute maximum of service. The accessories are designed to do that. All in all, the Automotive Exposition at Chicago will be a great win-the-war event. Several prominent men will make speeches at meetings and good roads gatherings in the convention hall.

Low Maintenance Cost for Electrical Signs

While the automobile industry has been quick to grasp the value of electric signs and apply them to its own particular needs there are few sales agents or garage men who have ever stopped to think how ridiculously cheap electric advertising really is.

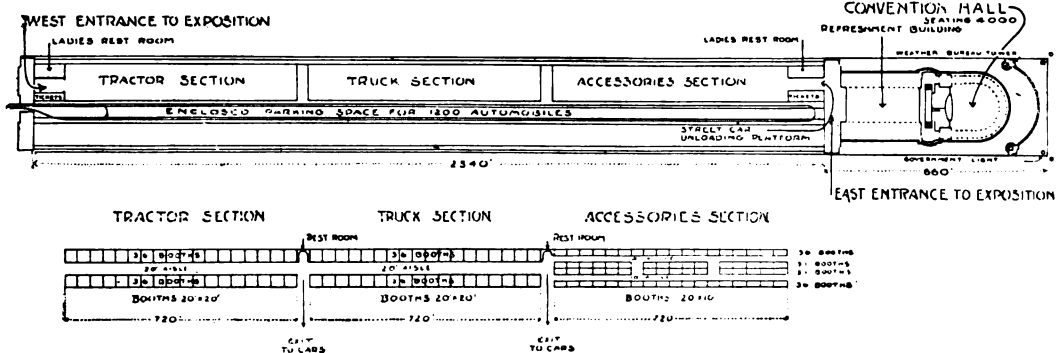
This point was recently illustrated by figures gathered by a salesman from the Flexlume Sign Co., Buffalo, who had a man stand on a corner under a Flexlume sign and check up the number of people who passed with a counting device. He then compared this number of people everyone of them more or less influenced by the sign—with the sign's maintenance cost and found that the owner of the sign was getting circulation at a rate of slightly less than one-fifth of a cent per thousand.

In other words he was getting several square feet of advertising day and night, right at his own front door, and one inch of newspaper advertising would have cost him a rate per thousand of fourteen times as high.



Typical Exhibition Space.

Teacher: If a farmer raises 1,500 bushels of wheat and sells it at \$2.07 a bushel, what does he get?
Pupil: An automobile.



Floor Plan of Automotive Exposition.

"Liberty Motor Batters European Engines' Test," —Vice Admiral Sims

Secretary Daniels received today a dispatch from Vice Admiral Sims stating that the recent test of a seaplane equipped with the Liberty motor resulted in "better performance as regards climbing and load carrying" than similar airplanes equipped with one of the best types of European engines. Admiral Sims says: "The British express great confidence in the Liberty motor."

The Official Bulletin, July 1, 1918.

It is not only at night that signs will work for you, shouting your message to the people on the street. The Oplex signs made by the Flexlume Sign Co. are day signs as well as night signs. They consist of raised white glass letters on a dark background, each letter a solid outlined unit, clear and distinct. This not only gives the letters greater reading distance when illuminated, but the raised white letters on a dark background make them an ideal day sign as well.

The makers of Flexlume signs have prepared a little book "Twenty-Four Hours a Day" which tells about their signs and shows many designs in colors. It will be sent free upon request if the American Garage & Auto Dealer is mentioned.

FARMERS URGED TO USE MOTOR EXPRESS

The U. S. Department of Labor urges farmers to use rural motor express lines to release labor for greater production of foods. One man driving a five-ton truck can haul to market more than three men with wagons and cover three times the distance in a given time, releasing 8 men and 16 horses to work on the farm. The Department has assured the Highways Transport Committee of its co-operation in the development of rural motor express lines as an aid in solving the farm labor shortage.

ACCES\$SORIES

Many small-town dealers are in reality slumbering when they allow mail-order houses and other out of town competitors to step in and take business which logically belongs to them. Mail-order houses have made a success of their business because they thoroughly understand the principle of salesmanship.

They know how to approach their trade, most of which is comprised of farmers. By constant direct-by-mail follow ups, with timely and interesting announcements, pertaining to bargains in automobile accessories, the farmers' business—*your business*—has passed your door on its way out of town to the factories of the mail order producers.

Yet you possibly lament your business losses when nobody is to blame but yourself. YOU are responsible and not the out of town competitor for the loss of Mr. Farmer's patronage. They have beat you at your own game, even though the odds were all in your favor.

Why can't you use the same methods to procure business that others do?

It applies both ways.

Yet another thing greatly to your advantage, which is to the disadvantage of those who would compete with you, is that you are veritably "next door" to the farmer. You know him—his family—his relatives—you can talk in the language which will appeal to him.

Most of the manufacturers of automobile accessories and parts are prepared to give you good co-operation—their ultimate success is dependent on your success and "merely for the asking" at any time you can get especially printed attractive folders and booklets, with your name and address imprinted, which can be very profitably used in combating the competition of the mail-order houses. Or, most of these accessory manufacturers will be pleased to circularize your customers, if you will take the trouble to send them a compiled list of your prospects.

Don't regard your accessory business as a side line business—give it serious attention and time, and you will be amazed at the progress of your accessory sales.

You occupy a strategic position as regards the sale and distribution of accessories. Being established in small towns where the percentage of automobiles in use is the greatest, you are an indispensable factor for the distribution of automobile accessories.

Opportunities galore are given you to sell more accessories. It would be a good plan for you to make a

card index of all your customers and prospects, and classify them as to whether they have automobiles, trucks or tractors. Many will have all, but in cases where they do not, most of the farmers will be found to have either automobiles and tractors, trucks and trailers, or automobiles.

Then check up and tabulate what your annual accessory sales per customer aggregate. Then set about to increase your sales, also to get more new customers. You should cultivate the practice of anticipating what your customers and prospects require in the way of accessories, and then being ready for them when they are ready.

Ofttimes you can influence a sale by letting your trade know about your new accessories, and you can do this in various ways; by personal demonstration which is always effective—by telephone—or by letter. And don't stop there either. Enlist the aid or help of the manufacturer who wants to assist you by helping you "dress up" or "sparkle your windows," and who will send you literature that carries a convincing ring to it.

One manufacturer of accessories very wisely remarked the other day that the small town dealer who sells accessories (and if he does not, he should) can best help the manufacturer by helping himself first.

Anything that will build up a permanent and profitable volume of business for the distributor will naturally react very directly to the manufacturer's advantage. *If you are to become a successful dealer in automobile accessories, you must handle a complete line of automobile accessories, so that your customers can get satisfactory and immediate attention.*

When the mail-order houses circulate their ammunition to the farmers, you can offset their encroachment by coming out in your local papers with a good advertisement, and space in a small-town paper is very inexpensive, considering its possible benefits. And herein you can tabulate your prices of accessories so that the farmers will have them for comparative purposes.

In this manner you can let the farmer know that you can meet the prices of the "out of town solicitor."

A "buy at home campaign" would also be a movement of far-reaching consequences if you could persuade others engaged in similar business with you, to get together and spend a little money co-operatively, to educate the farmers that they gain nothing except inconvenience when they send out of town for their accessories.

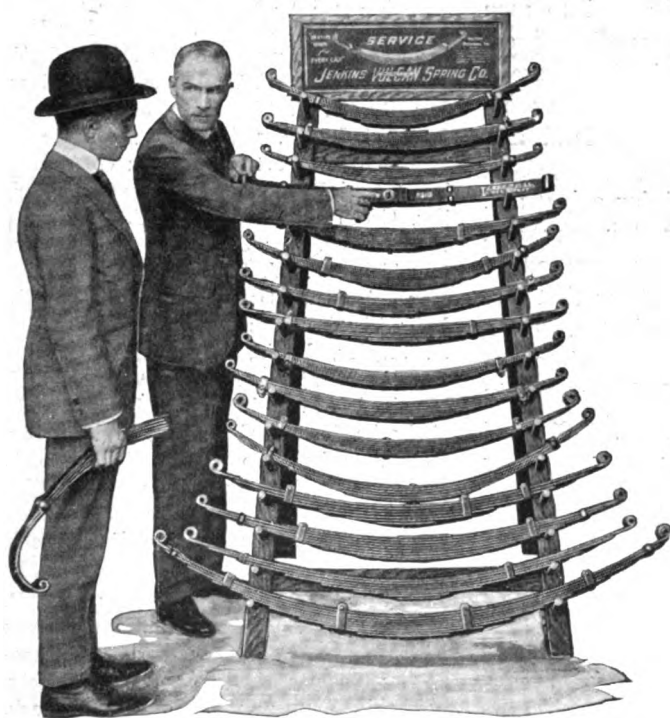
ACCESSORIES

Jenkins Spring Easels Help Make Sale Profits

It is claimed by those who know that the average spring breakage for all automobiles is one to each car annually. The breaking of a spring is not one that the average car owner apprehends, so when this mishap occurs, it has often happened that the car would be invalidated for a week or more until the proper spring could be secured from the factory or otherwise procured.

President T. B. Jenkins of the Jenkins Vulcan Spring Co., Richmond, Ind., conceived a new idea in spring merchandising and some few years ago began to put this plan into effect. Briefly, this comprehended the idea of offering dealers and garage owners an assortment of springs in various sizes and types, duplicates of those used on most popular cars.

As a part of this plan, the Jenkins concern provided a strong easel or spring rack containing springs of all sizes and makes. This answers not only as a place



to keep such an assortment, but is also an excellent display rack. Many of the largest dealers all over America now show this Jenkins' rack as part of their window display.

The Jenkins Vulcan Spring Co. some time ago entered into an extensive general magazine publicity campaign to supplement the advertising in this and other publications. The keynote of the Jenkins' plan is "Service." The concern states in its advertising that there is a spring in every town for every car, which means that within a reasonable distance from where a breakage occurs, there a car owner will find a dealer or garage who will have a Jenkins Vulcan spring exactly duplicating the broken one. It is manifestly a great advantage to have such a repair made without undue loss of time.

Mr. Jenkins stated recently that their springs are now being used extensively in Mexico and Canada as well as in the United States.

District Men to Aid in Selling Convertible Body

To assist in the campaign for distributing Heath-Duplex attachments for Ford cars, the McCord Manufacturing Company announces the appointment of district managers, Ward Keller, Eastern territory; Frank Pilling and Henry Belcher, Northern Central states; J. A. Fields, Northwest; and E. W. Nicholson, Pacific Coast, with headquarters at San Francisco.

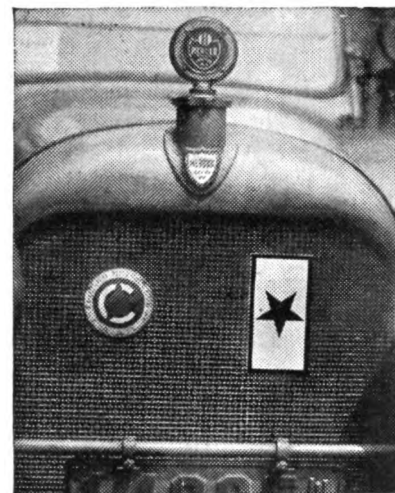
All of these men will work under the direction of H. E. Westerdale, manager of the Heath-Duplex Division of the McCord Manufacturing Company.

The Heath-Duplex is an ingenious convertible device for Ford touring cars consisting of two angle irons permanently attached to the Ford chassis and a folding delivery body. The Ford tonneau is made removable, so that it may be quickly lifted off when the Ford is used as a delivery car. When used for passengers the body

folds under the tonneau and there is no visible sign of the delivery attachment. It is said that either operation requires only a minute, and is accomplished without the use of tools.

Radiator Service Emblem Now Put on the Market

A small automobile accessory which should find a ready sale in these days is the patriotic automobile radiator service flag emblem which has just made its appearance. It is made of 28 gauge steel, with beveled edges and its size is 3 1/4 by 5 1/4 inches.



It comes complete and ready to attach. It is to be attached to the front of the radiator near the top, and is already finding a ready sale. Prices to dealers will be furnished by the L. & M. Service Specialty Co., 504 Sherman St., Chicago.

With automobile production vastly curtailed, hundreds of thousands of owners will repair and dress up cars that under normal conditions they would have traded in for new ones. **THIS MEANS LOADS OF ACCESSORIES.** The manufacturers have wisely foreseen this. In doing so they are not only cashing in on a legitimate opportunity, but they are also helping in the conservation movement, inasmuch as they make it possible for people to use the old product a while longer before buying a new one.

—Printer's Ink.

5000 Members in Ninety Days— Goal of National Dealers' Body

More Numerical Strength Required to Protect Automobile Trade From Oppressive War Time Tax Measures

Plans for increasing the numerical strength of the organization to 5,000 within the next 90 days were adopted at a war-time convention of the National Automobile Dealers' Association at the Hotel La Salle, Chicago, June 14 and 15. The enthusiasm and interest of the motor tradesmen was shown by the fact that men were present from Florida, New Jersey, Texas, Oregon, Oklahoma, Massachusetts, New York, Colorado and Virginia, as well as from nearer localities.

President F. W. A. Vesper of St. Louis explained the need for a greater membership in order that the statements of the body's officials to authorities at Washington might carry the most weight. Arrangements were made for Mr. Vesper and Executive Secretary E. E. Peake of Kansas City to hold meetings in various parts of the country to push along the membership campaign. Every car dealer in the United States has been or will be, asked to become a member.

It was announced at the meeting that car dealers need not wait for someone to take their application but that the proper thing to do is to write a letter to the N. A. D. A. headquarters, 3550 Lindell Boulevard, St. Louis, Mo., expressing a wish to become a member and enclose a check for \$15. This is the initiation fee and dues for the first year.

Much of the membership campaign work will be handled by Mr. Peake. He is secretary and treasurer of the Kansas City Motor Car Dealers' Association and president of the National Association of Automobile Show Managers. His own office address is Gloyd Block, Kansas City, Mo., but he will spend most of his time on the road or at the Association offices at St. Louis.

Individual Members Wanted.

Efforts are to be made to interest both individual dealers and also the

various city, county and state organizations to join the National body. The N. A. D. A. officers feel that the strongest possible organization of car dealers must be gathered together in order that the retail end of the automobile industry may be able to obtain recognition at Washington when matters of taxation and other things affecting the business are under discussion.

Plans were also discussed for carrying out the war conservation measures that had been recommended by the N. A. D. A. War Service Committee. S. A. Miles, manager for the annual national automobile shows at Chicago and New York, made an address in behalf of the Rural Motor Express movement, which has the endorsement of the National Automobile Chamber of Commerce. He advocated that trucks be sold to men who would organize rural express service in their localities, as thereby the farmers were helped get the most food products from their land and labor.

Those present voted for a just and equal tax upon all motor cars and expressed themselves as opposed to automobile taxation systems that discriminate against the industry. President Vesper was empowered to appoint a committee of five members to act for the dealers of the country at Washington in discussing automobile tax measures proposed or pending.

These resolutions were passed:

"Resolved: That it is the imperative and patriotic duty of every dealer, who has not already done so, to put into execution at once the conservation recommendations of the Commercial Economy Board.

"Resolved: That dealers' associations and individual dealers extend the fullest co-operation in the establishment of the system and systems

of rural express routes as proposed to the association by Mr. S. A. Miles."

Those Who Attended.

Among those who attended the meeting were the following: Andrew Auble, Akron, O.; W. A. Carpenter, Albany, N. Y.; C. R. Zacharias, Asbury Park, N. J.; John Lottridge, B. F. Ulmer, Atlanta, Ga.; J. H. Johnson, Boston; A. D. Corwin, Arthur E. Randall, Brooklyn; James Levy, W. J. Boone, J. T. Davis, D. E. Whipple, F. P. Bowman, Leo A. Peil, Paul A. Frank, H. P. Branstetter, John G. Barker, A. D. Caldwell, Thomas J. Hay, K. B. Harwood, Chicago; Walter D. Meale, H. O. Secrest, F. E. Stuyvesant, Fred H. Caley, M. B. McLaughlin, T. H. Towell, Herbert Buellman, Cleveland; Frank J. Girard, Victor Moon, Columbus, O.; H. S. Leyman, H. K. Shockley, Cincinnati; A. A. Daehler, H. F. Killean, Clinton, Ia.

H. H. Shuart, Detroit; W. G. Langley, Dallas, Tex.; H. G. Mook, Denver; Jos. P. Evon, W. N. Smith, Dubuque, Ia.; Victor G. Kropf, Davenport, Ia.; Dean Schooler, G. W. Jones, C. W. Payne, Des Moines, Ia.; Russell S. Sherman, Duluth, Minn.; Chas. F. Loesel, Erie, Pa.; A. C. Heath, A. R. Hoenk, Fort Dodge, Ia.; G. A. Beeley, Grand Rapids, Mich.; Chas. W. Collier, Green Bay, Wisc.; E. C. Eusmirger, Harrisburgh, Pa.; George L. Glass, Houston, Tex.; E. W. Steinhart, John B. Orman, Andrew Hutchinson, Indianapolis, Ind.; Claude Nolan, Jacksonville, Fla.; J. A. Snyder, Joplin, Mo.; L. T. Bennett, Kalamazoo, Mich.; R. C. Greenlease, J. F. Martin, W. E. Mallony, H. M. Genung, E. E. Peake, Kansas City, Mo.; E. M. Rowe, A. W. Parke, Clio Harper, Little Rock, Ark.; Harry Dahl, La Crosse, Wisc.; William J. Kinder, La Salle, Ill.; H. E. Sidles, C. A. Lord, Lincoln, Nebr.; Prince Wells, W. A. Thomas, Louisville, Ky.

Bart J. Ruddle, Milwaukee; H. B. Markes, O. S. Jacobson, Madison, Wisc.; F. E. Murphy, Walter R. Wilmot, Minneapolis; Thomas H. Smart, G. T. Schlecht, Memphis, Tenn.; C. E. Holgate, Newark, N. J.; F. R. Sanderson, Nashville, Tenn.; Charles M. Brown, New York City; W. H. Vesper, S. S. Lindsee, Oklahoma City, Okla.; Edward Krueger, A. W. Kaufman, Oshkosh, Wisc.; Matt Knaul, Peru, Ind.;

(Continued on page 21.)

Progress or Retrogression—Which? One Must Advance or Lose Ground

Motor Car Dealers Should Take on Supplementary Lines— Tractors, Trailors and Trucks—to Meet Abnormal Conditions

By R. M. Fowler.

In these days of abnormal conditions, the motor car dealer cannot stand still. He must change his methods and plans, and when necessary, his goods, as the industry changes or see his business become gradually more and more restricted until it becomes a losing venture.

This does not mean that the passenger car business is to stop, by any means. The motor car is too much an indispensable article for that. Business of practically every kind is too dependent on it to allow a decrease in production greater than necessary. But some reductions have been deemed imperative and this coupled with the enormous requirements of the government for the different branches of the military forces, makes it certain that dealers will not get the number of cars they received last year.

It becomes necessary, therefore, for dealers who have derived their profits from the sale of passenger cars to take on supplementary lines and the natural ones are the other products of the automotive industry, particularly farm tractors, trucks and trailers.

Farm tractors, in localities where there is a large potential market, are an unusually promising line, although the production this year is not great enough to make it quickly profitable. It has, however, tremendous possibilities for development.

Car Dealer Can Give Service.

The distribution heretofore has been almost wholly through implement dealers, along with other farm machinery but because of the similarity to motor cars and trucks, and the need of adequate service, the motor car dealer is better fitted to handle the sales. He has the skilled mechanics and the service facilities to give the

quick, thorough assistance essential to complete success in tractor work, and in the great majority of cases, the implement dealer has not.

There are several points to which the dealer contemplating the sale of tractors should give most careful attention.

It is essential that the dealer either hire special salesmen who are thoroughly versed in the actual use of farm tractors or that he acquaint himself with their use. A merely superficial knowledge will not suffice, for unless the salesman can talk the use of the machine intelligently he cannot achieve complete success nor get the full confidence of the prospect. An understanding of the mechanism of the tractor alone will not do this; an accurate knowledge of the service it will render is needed.

Great care should be exercised in the choice of a tractor, as many are being offered that are unquestionably doomed to failure. There is a lamentable tendency among some manufacturers to follow the same pathway that carried so many of the early truck makers to oblivion—that is, trying out constructions that had been tested in the development of the passenger car and there found impractical.

This refusal to profit by the experience of others in a similar line is going to handicap the tractor business by giving the idea that the machines are not wholly practical as now built. The wise dealer will avoid this by choosing a tractor that does not depart radically from the standard constructions proved by service in the truck industry.

Must Study Farm Needs.

Careful study of the farms likely to buy tractors is advisable, so as to de-

termine the size of tractor that will sell best. Too large a tractor is as wasteful in use as too small a size. The large grain farm of the northwest can best use the largest, most powerful sizes, but on the smaller farms, cut up into a number of fields and with a wider variety of crops, the ability to handle the big gangs of plows, harrows, etc., is not desired. Two or three gang plows are all that are needed, but easy handling, short turning and the ability to handle all sorts of work are desirable.

Low price is an advantage but not to an extent that means sacrifice of serviceability. The farmer today is looking for quality and long life to an extent unthought of a few years ago. Permanent business must be built on this foundation.

Many of the most successful dealers in the country are turning to the motor truck to supplement their passenger car sales. Never before has the demand been so great and the production, although not adequate to supply all the possible market, is great enough to assure excellent business. At the same time, handling trucks does not involve great changes in the dealer's organization.

But here, as with the tractor, the choice of the make to be handled and the study of the local market are very important.

In general, the smaller trucks have the wider sale and the large capacities a greater profit per truck and require less service. In some places, the one is the most profitable in the long run; in other localities, the other; but in most cities, a full line is necessary. Different business—and in many cases, different departments of the same business—require trucks of

(Continued on page 22.)

**Advertisements from Various Parts of the Country Shown
Below Are Small but Compel Attention**

Hurry Your Advertisement Along, the Contest Closes August First

Very little time is left for our readers to send in their advertisements in order to be eligible for one of the prizes in our advertising contest. This closes August 1, 1918, and specimens of advertising, to be eligible for the competition, should be mailed so that they will be post marked not later than August 1.

We are offering cash prizes amounting to \$50.00 for the winners in this event. \$25.00 will be the first prize. \$15.00 will go to the individual or concern whose advertisement is rated second best, and \$10.00 will be the reward for the third best advertisement. Advertisements submitted in this contest will be examined by men who have made a special study of advertising as applied to the automotive business.

Advertisements which we want submitted in this competition are the individual creations of car and truck dealers, agents for tractors, trailers and farm electric outfits, tire repair men, garage operators, service station owners—in fact all of the business men who are engaged in selling automotive products and accessories or giving service to users of this class of merchandise.

We are not interested in the big sized pieces of advertising copy that are prepared by advertising agencies or by factory advertising departments for use anywhere in the country. We want to get more of the smaller advertisements, ranging in size from one to four columns, and having more of a local or perhaps timely appeal than the large advertisements prepared by the factories can possibly possess.

No subscriber need hesitate to send in his candidate for one of the prizes because he has had some outside help in preparing his advertisement. As a matter of fact a good many of the small advertisements are those which the local newspaper man has helped the motor tradesmen to prepare.

In the letters that are written to accompany the advertisements sent to us we would like to know something about the results that could be traced to the advertisements submitted. Tell us as briefly as possible why the advertisement is considered the best one you have used. We are interested to know what kind of advertising our subscribers find most profitable, whether it be the space used in daily or weekly newspapers, billboards or direct advertising done by mailing letters and circulars to prospects through the mail.

\$50 in cash prizes

\$25 - First prize
\$15 - Second prize
\$10 - Third prize

**Are you going to win one
of these rewards?**

One of the features of advertising in which we are most interested is the size of space that has proved to be best for selling new or used cars, trucks, trailers, farm electric outfits, tires, accessories, and service work of different sorts.

The result of the competition will be given in the September number of the AMERICAN GARAGE & AUTO DEALER and the names of the prize winners will be printed together with reproductions of the three advertisements selected by the judges as the best ones of those submitted.

Hurry your advertisement along. Send it in now while you are thinking about it. Remember that even though you may be in business in a small place that is no reason why you should not win one of the prizes. Even if you only advertise a few times a year it may still be that one of these advertisements will have produced enough profit for you so that it will win the first prize of \$25.00. Delays are dangerous. Mail your advertisements to the AMERICAN GARAGE & AUTO DEALER, 116 So. Michigan Ave., Chicago.

5,000 Members in 90 Days Goal of Dealers' Body.

(Continued from page 18.)

E. E. Cohen, Portland, Ore.; A. E. Maltby, Philadelphia; R. W. Coon, Parsons, Kan.; Charles L. Turner, Peoria, Ill.; Edward J. Thompson, Pittsburgh; John E. Finney, Richmond, Va.; W. A. Taylor, Rockford, Ill.; Jack Grant, John F. Hanson, J. A. Jacobson, C. T. Britzke, Racine, Wisc.

F. W. A. Vesper, P. H. Brockman, G. Elmo Holke, Joseph A. Schlecht, St. Louis, Mo.; D. B. Houston, St. Joseph, Mo.; W. A. Williamson, William Steinhardt, R. W. Ingersoll, San Antonio, Tex.; B. E. Umphres, Springfield, Mo.; Le Roy Eschner, L. W. Jordan, St. Paul, Minn.; Ray K. Van Brunt, Sioux Falls, S. D.; O. W. Fritz, C. S. Bruce, Springfield, O.; F. C. Farquharson, Trinidad, Colo.; W. H. Imes, James R. Cowdrey, Topeka, Kan.; W. W. Garabrant, W. R. Schilber, Utica, N. Y.; B. E. Farrand, C. A. Morris, J. A. Perenil, Waterloo, Ia.; E. P. Haynes, M. H. Schollenberger, Wichita, Kan.; Lynn M. Shaw, Youngstown, N. Y.; I. Van Baalen, Youngstown, O.; Ed. B. Roemer, Zanesville, O.

When you save and buy WAR SAVINGS STAMPS you help make the world safe for democracy and at the same time make your financial future safe for yourself.

A business proposition is big or small, according to the eyes through which YOU see it.

The real trouble with many garagemen and automobile dealers is that they are making less profit than they think they are; and generally, they refuse to believe it until it is too late.

Simple Driving Signals Suggested by Big Automobile Manufacturer

John N. Willys Believes Position of Driver's Arm Should Indicate Slow Down or Direction of Turn

John N. Willys, president of the Willys-Overland Company, has suggested that the National Automobile Chamber of Commerce recommend for universal national adoption three simple road signals, which will increase the safety of traffic.

Mr. Willys suggests, arm pointing up, turn to the right; arm straight out, turn to the left; arm down, slow down without turning.

action will be followed by their recognition by law all over the United States.

Traffic officials say that the standard adoption of a universal road signal of this character will prevent many minor accidents and greatly increase the safety and convenience of travel in congested streets. The simplicity of the signals suggested is perhaps their greatest recommendation.

quality without paying for it—nor can you. The cheap truck will have a rapid sale at first but does not pay either buyer or seller in the long run.

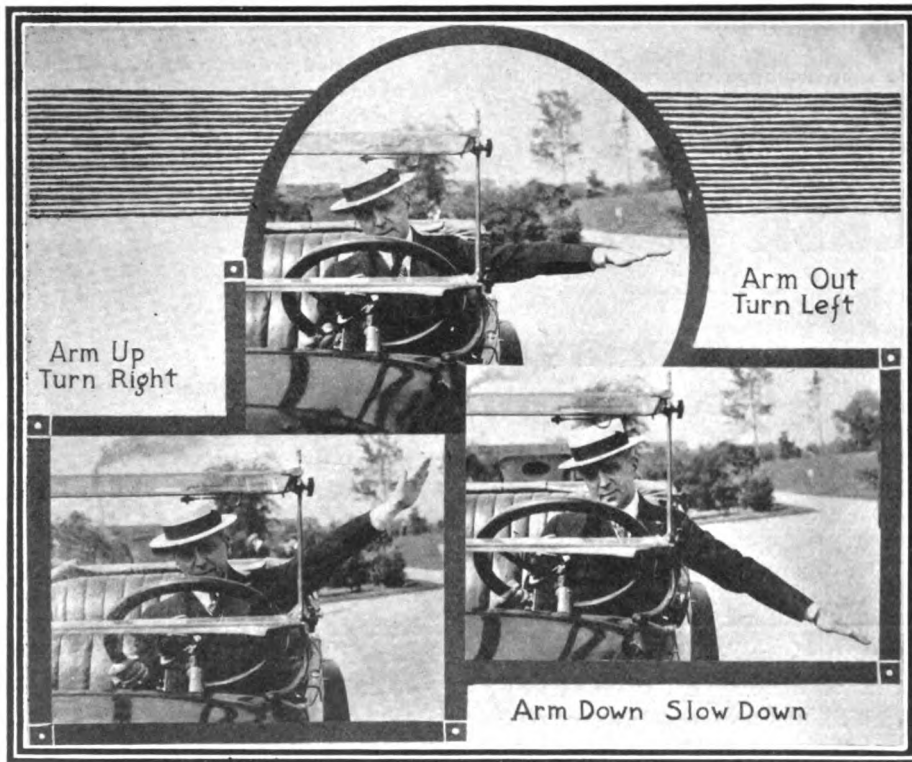
Trailers Lower Haulage Cost.

In connection with truck sales, the dealer can profitably handle trailers, both semi-trailers and four wheeled. And in choosing a truck to sell, he should pick one that is adapted to the hauling of trailers. Many lines of business can lower their investment and their haulage cost by the use of proper trailers and at the same time make their deliveries faster.

The dealer can enlarge his field through their sale. He can close a great many prospects for truck-trailer units whom he could not "land" for a truck of the same total capacity. And he can get deliveries, in many cases, on lighter trucks and trailers where he cannot get the heavier models, yet they will carry the loads needed.

There is one very important point that must be given the most careful attention by the dealer who is about to enter the truck or tractor business—a point that the failure to give proper value to has caused successful passenger car dealers to fail in their new venture. That is the fact that the method of selling—the appeal—must be changed.

Recognition must be given to the fact that the average man is a progressive in his social life while in his business he is a conservative. He wishes a passenger car; a truck must be sold to him. In the first case, he is influenced by details—comfort, style, smoothness, snap; in the second, he must be persuaded of the money-making, time-saving value—he must be sold on what it will do for him in his own business, not on details of design or equipment.



John N. Willys Shown Practicing What He Preaches.

These signals have the advantage of common use by a large number of automobile drivers. They are the most natural signals and the easiest to remember. They have already been adopted by a number of local automobile clubs.

The approval of the National Automobile Chamber of Commerce will bring the signals very rapidly into universal use, and it is likely that this

Progress or Retrogression—

One Must Advance or Lose

(Continued from page 19.)

many sizes and the dealer meeting all needs is in the best position.

The experienced dealer is getting away from the extremely low priced truck. Costs in the various plants do not vary radically, and to a considerable extent, the value is reflected in the price. Your customers cannot get

How to Make the Shop Pay

Central Shop to Take Over Men and Equipment From Dealers and Then Handle All Service Work

By E. B. HINRICHSEN.

"You see, Mr. Brown," said Bill, "it was working out wrong. You made your objection to the agreement plan pretty strong and maybe I saw farther than you did. After our talk I got to thinking how a binding contract could be made but you said you did not think any contract of that kind could be made legally binding. It looked to me like the deal could never be made permanent. Then the idea came to me that one shop for the entire organization would be the thing.

"I thought it over from every angle and the more I thought, the better it looked. After I had the plan worked out so it looked as though it would do I went to Mr. Bronson. He has told you that he is ready to finance the deal and his lawyer has worked out organization plans far ahead of my original ones.

"My first scheme was to get all the dealers to place their shop forces and equipments in one building, under one management and, at the end of every thirty, sixty or ninety days divide the profits or losses. It has been made clear to me that such a plan will not work. You can see why, I guess. It is all out of proportion and some of the organization would have to carry the rest. Mr. Bronson and his friends have suggested this:

"That we form a corporation with a certain capitalization. The shop equipment and good will of all the shops are to be appraised and taken over in exchange for stock. The dealers are then to make a one-year contract with this central shop to handle their work.

Will Reduce Costs.

"For the first year it will be done on a time and material basis in order that we may have something to figure from in making flat charges, for the second year. By bringing all the work to one shop, we can reduce the cost greatly and operate with much less equipment. We can also have the progressive repair system that you and I have talked over so much. This will keep the men employed only on such work as they are best at. The present shop forces will also be taken over, although the total working force can be reduced after a time. What do you think about it?"

"Bill," said Mr. Brown, winking at the banker, "you have missed your calling. You should have been a former of trusts. In fact, I think this whole deal smells strongly of trust methods. I suppose you

are safe, though?" The lawyer nodded.

"Well, then, I have only one suggestion to make and that is when taking over the shops, you also take over the repair parts and fittings. This will leave the dealers with their sales organizations only and will absolutely block any chance of crooked work. I suppose you have your stock distribution details all worked out to the satisfaction of all concerned and the only chance for failure that I can see is for some of the dealers to refuse to come in. Have you sounded any of them yet?"

"Mr. Wilton is ready," said Bill, "and with a few exceptions the rest will follow him."

Mr. Brown as Manager.

"I think I can take care of the exceptions," remarked the banker. "There is one thing, though, Mr. Brown. I have made one condition in regard to this deal and that is that you assume the management—at least temporarily. I cannot devote any time, myself, to the details and

I will not feel safe unless you agree to organize and manage it for a while.

"I have great hopes that eventually Bill will be able to step into the place but he will be busy with the shop end for some time and lacks the office training necessary for such a position. The place will pay well and need not occupy all of your time. Can you arrange your affairs so as to do this? If not, I am afraid the deal will never go through. Bill is a little uncertain about it even now and I am afraid that with a stranger in, he may fall down."

"I think I can manage to do it in some way. The prospect is tempting. In a few days I will give you a final answer. In the meantime, get your dealers lined up and Bill and I will get together on a location and other arrangements that you people probably would not be interested in. I suppose you will attend to applying for a charter and any thing else that it may be necessary for you to do in order to get started."

"We will do that," said the banker, "just as soon as all the dealers agree to come in. I think we can assume that the organization will be ready in a week or ten days."

Advertising Great Aid in War Time Industry

"American industry would be unable today to grapple efficiently with the problem of war production if it were not for the force of advertising," said Merle Thorpe of Washington, at a convention of the Association of National Advertisers at the Hotel La Salle, Chicago, recently. Mr. Thorpe is editor of *The Nation's Business*, published by the Chamber of Commerce of the United States.

"Advertising has speeded up business so that we have been able to meet the greatest crisis in the nation's history. It has advanced our standards of living and is recognized as one of the greatest educational forces of today. In spite of this many congressmen and governmental department heads regard advertising as something clever, slick and questionable.

"I believe advertisers should start a campaign to teach not only these persons but everyone just what advertising is. If the public is properly educated there will be no need for the education of congressmen or departmental heads."

War Work Money Opens New Field to Dealers

With the remarkable activity in steel and ammunition plants along the shore of Lake Michigan just to the south of Chicago, has come many over-night rich men, figuratively speaking. Many of these war workers live in Chicago and are transported back and forth between the factories and their homes, a distance of thirty or forty miles, each day by the companies for which they work. The money paid them is so much in excess of what they formerly got, they feel themselves moved up into the automobile-buying class, hence Chicago dealers find territory that formerly was "barren" now fertile for the sale of almost any make of car.

A graphic idea of how sales are being made in the new territory is given by a map in the office of Tennant Motor, Limited, Chicago financiers of retail automobile sales on deferred payments. Reports are made to this company each day by dealers selling in the new territory and the number of tacks that have to be put in to represent new car owners each week is a revelation to those who heretofore figured this as barren fields.

EDITORIAL REMARKS

New Profits for Old

With the production of new passenger cars being cut down from time to time, owing to war demands for steel, those motor tradesmen who in the past have depended upon profits from car sales must find some new merchandise which can be retailed at a gain. A good many men who have been selling only passenger cars have been adding accessories to their wares during the past few months with very pleasing results. Denied the chance to buy new and up-to-date passenger cars a good many owners of older vehicles are very willing to buy accessories which make their automobiles look better, operate easier, and ride more comfortably.

But for the enterprising motor tradesmen the taking on of accessories is but one step of several that he should take to find new profits for old, especially as the source of the old profits is decreasing. He ought to be selling motor trucks. If his place of business is located in a small city or in a farming community the lighter kinds of trucks will naturally sell more readily than the big, heavy ones that are used in cities where great loads must be carried in single units.

The sale of attachments, by which passenger car power plants are converted into trucks, is something that car dealers whether in small or large cities can go into with a small capital outlay, while the profit returns are limited only by the amount of energy and thought which is put behind the business. The sale of trailers is another way for the motor tradesman to add to his bank account. Trailers of various sizes can be well used by a great many users of trucks, and they have the great advantage of being wonderful savers of time. A trailer can be loaded or unloaded while the truck which hauls it can be earning money for its owner carrying other goods to or from some different destination.

Those motor tradesmen who are located anywhere near farming communities or districts where there is much land devoted to vegetable gardens ought to look into the closely associated lines of tractors and farm electric outfits. Automobile selling establishments, which as a rule have some sort of a service station or facilities, can handle tractors to great advantage, because they are in the best position to care for the needs of these machines when they are in operation.

If a farmer needs a part for his tractor or if a tractor needs adjusting the motor tradesmen can send the part or a mechanic to do the adjusting very quickly by using his service car for this purpose. The farm electric plants, which are perhaps more generally known as farm lighting plants, can be sold not only to farmers, but also to many residents of suburban districts where there is no electric current supply available from some public service corporation. One of the most important features of the farm electric plant is its adaptability for use as a source of power to operate a good many machines used

on farms, which heretofore could be operated by hand, but now must be run by some mechanical means because the number of young men who have gone into the Army and Navy have left the farmers of the country very short of man power.

Perhaps one of the greatest advantages of tractors and farm electric plants is that in a good many cases they can be used or operated by women or boys who are able, by the mechanical assistance to do the work that formerly required the services of strong men.

Drafting the Motor Truck

The importance of the automobile—especially the motor truck—in coping with the transportation problem in this country looms up bigger every day. The pressing of trucks into the service of hauling freight between points on regularly established routes began some time ago, and the spectacle of a fleet of big motors trundling over the smooth roads of Eastern states now amounts to far more than an attractive picture in an advertisement. They are doing the work in a practical, matter-of-fact way, and the experience and results show they have only started to demonstrate what they can do in the way of relieving freight congestion.

Men well informed on the subject estimate there are about 400,000 motor trucks in the United States. If they can be utilized efficiently to carry loads both ways it does not require a very keen observer to see that they will lift a heavy burden from the carriers now doing the work unaided.

"Return Loads Bureaus" are now in operation in the East, New York, New Jersey and Connecticut having thirty already on the job. Other states are getting busy in the same direction and an agitation is beginning to secure the appointment of a government representative to take charge of the work, and endeavor to co-ordinate the various elements entering into the matter so that there will be little or no waste either in time, effort or gasoline. It is self-evident that a truck that hauls a 3-ton load twenty miles going out and a 3-ton load on the return trip, will do twice as much work as the truck that goes loaded one way and comes back empty. It is, then, a question of furnishing a load for both trips. In that way time, labor and gasoline can be economized materially.

One improvement leads to another, and the increased utilization of motor trucks inevitably will speed up the construction of good roads. Highway Commissioners all over the country are awakening to this phase of the question, and there is bound to be co-operation between them and the agencies in charge of the freight movement by trucks. Under our form of government most township organizations have a road official, and it has been suggested that the broad plans of improving highways rather

be turned over to state authorities than left to local agents. The latter lack, usually, the broad understanding of the proposition that would insure an effective handling of good roads plans as a whole, as they are inclined to be satisfied with keeping up the roads only in their own neighborhoods. They go on the principle that if their own particular square mile of territory is in good shape their duty is ended. Of course if *every* man kept his own door yard clean the whole job would be done, but unless there is a wider co-operation among all there is sure to be left undone much that should be done.

The good results of handling the good roads problem in a state-wide way rather than by townships or counties have been shown in Ohio, New York, Pennsylvania, Michigan, New Jersey and Connecticut. In the last-named state the state highway commissioner has been in charge of the work and the results have been gratifying. Of course it takes money but what better use can a state make of its revenue than in improving its system of roads? No tax payer with an ounce of gray matter in his skull will object to an appropriation, properly utilized, to repair and improve the roads. Good roads mean an easier and better living to every man, woman and child in the commonwealth.

Hope for Road Betterment

Now that those in power at Washington, acting upon the suggestion of the Secretary of Agriculture, have appointed a highway board having some National authority in matters of road construction and finance, the outlook is not as bad as it has been. It has been felt for some time, in fact, ever since this country entered the war, that the indiscriminate shutting down of any and all projects for road improvement was a grave mistake, and one that must sooner or later be revealed as such. Motor tradesmen who knew anything about the condition of this country's highways have known for a long time that in most cases the construction of the average American "good road" was not sufficiently solid for it to stand up under continued heavy traffic.

With the breaking down of the railroads of the country in their task of freight carriers there was, of course, a large diversion of extremely heavy loads from the steel highways to the road surfaces.

When the road surfaces, no matter if they present a smooth appearance on top, were not laid upon an adequate and solid foundation, it did not take very long for the freight which the railroads refused to show the utter lack of real load-carrying capacity of the public highways.

More than two years ago an Eastern motor tradesman made an effort to interest others in the trade in a project looking to the construction of highways and bridges much wider and more solidly built than any then in use in this country, his idea being that these roads should be termed "military highways."

Some of the roads built by the Romans in the days of Caesar are still good roads, but that is because they were

very solidly built with foundations that might have served for heavy buildings. While it perhaps is too much to be hoped that it will be possible to get any similar highways built in this country just at present, the motor tradesman can still feel somewhat encouraged over the appointment of the United States Highway Council. Now at least there is some one centralized authority to whom appeals can be made for permission to improve roads that need it or to spend money upon the maintenance of highways that have been bettered.



The above is reproduced from the Norwesco house organ, **AUTO SUGGESTIONS**, and is reprinted by the courtesy of the Northwestern Chemical Company.

\$5 for Window Display Pictures Is an Easy Way to Make Money

Practically every motor tradesman in the country, if he were suddenly asked, "Could you use \$5.00?" would answer, "Sure."

Every reader of this paper is invited to try for one of the \$5.00 awards which are offered to those who send in photographs of window displays which we accept for publication. We want to get a lot of these pictures. We believe that one of the best ways to help motor tradesmen make more money is to describe and picture for them the ways by which others in the same line of business have made more sales and money.

One of the surest ways for the motor tradesman who has a window at his disposal for display purposes to make money is to show some of his goods attractively arranged in this window. In the great cities stores with window space fronting on streets where there is much pedestrian traffic rent for very high prices. This is due to the fact that the concerns or individuals who rent these stores know they can increase their profits from the sales of goods attractively exhibited in the show windows.

Every motor tradesman who sells accessories or cars, trucks, trailers, farm electric outfits, or automotive accessories of any kind can make money by devoting a little time once a week or so to putting some of his goods in a window where folks who pass his place of business can see what is displayed.

Practically all of the manufacturers and many jobbers of automobile accessories have window cards or display racks or trimmings of some sort or another which the motor tradesmen can have for the asking. Quite often the makers or jobbers will even pay the express charges or the postage on this material.

One thing to remember about window displays is that it is well not to fill a window too full, for in that case the sales possibilities of the display

are hindered because the possible buyer sees so many articles that it is difficult to focus his attention on any certain one of them.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

We do not need elaborate photographs of these window displays, but pictures taken with kodaks can be used. When sending photographs lay the prints flat, and put heavy card board or corrugated paper on each side to protect the photographs from damage.

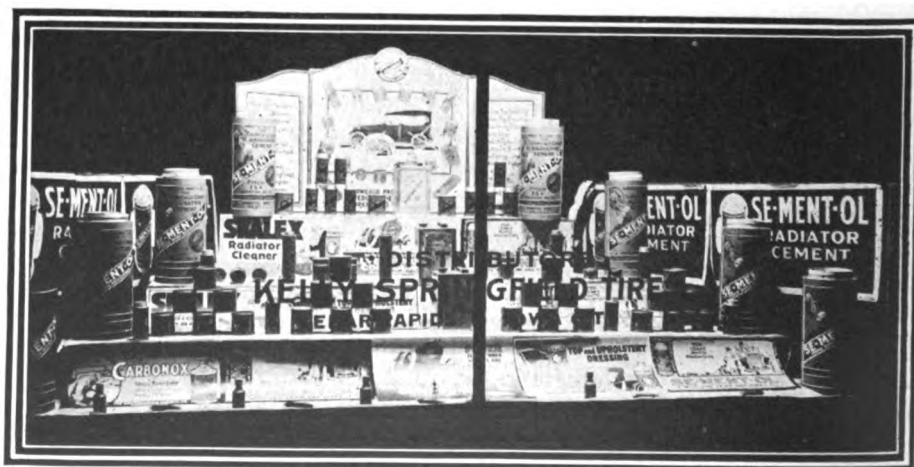
When sending pictures be sure to tell us something about the display,

such as the total expense of time, and money required to install it, and also tell us what the results were in business done as a result of the exhibition.

Send the photographs and letters of description to the AMERICAN GARAGE & AUTO DEALER, 116 S. Michigan Avenue, Chicago. All pictures which are submitted to us will be returned to the sender. Every picture that we can use will win for the sender a check for \$5.00 from us, even if we are not able to print the picture for several months.

The motor tradesmen in the smaller cities and towns throughout the country are especially urged to send in photographs of their successful window displays.

Of course, the boss has many failings. But credit him with doing his best. He hired you. You may be the whole show. But who guarantees the "gate"? There's just one man can keep raising your pay. Look him square in the eyes and ask him about it—when you shave. Whose job are you after—the man ahead of you or the one behind? Look out! You may get it. You're always in business for yourself. It might pay you to give the boss a bargain now and then.
—Hardware Dealers' Magazine.



Picture of window display installed by the Cedar Rapids branch house of the Western Auto Specialty Co., Iowa City, Iowa. All the merchandise shown is the product of the Northwestern Chemical Co. Motorists of the whole neighborhood received letters telling them about the display and the results were very gratifying. This wins one of our \$5 prizes.

Novel Way to Spend Vacation and New Method of Advertising

C. H. Wooden, of Lamar, Colorado, Helps Raise \$102,000 for War Time Purposes in His Recreation Period

"Well, Bob," said Charlie, "I don't see any way of having a vacation this summer. But I do want to get away from the store a few days where I don't have to be all the time, saying: 'yes, your car takes a seven-eighths eighteen spark plug' and 'yes, we will deliver your new car next week.'"

"But, Bob, I want to tell you that this is war times and I don't want to go away to the mountains and spend money when I ought to be buying more Liberty Bonds."

Bob did not say anything. He had been appointed manager of the War Savings Stamp Drive, besides being secretary of the Red Cross and thus the story runs as it happened in the office of The Lamar Motor Sales Co., at Lamar, Colo. Between Bob Christy, manager, and Charlie Wooden, assistant manager. This all happened one night in June.

Next evening at the meeting of the Business Men's Association, Charlie furnished a surprise when he stated that Lamar was going to put on the greatest Fourth of July celebration. That it was all going to be given by local people and that every cent taken in was going to the Red Cross. That it meant that there would have to be five hundred workers. All thought that the plan was great and Charlie was elected director.

City Went Over Top.

Bob met him the next morning down at the office and said, "You help me on stamps, I will you on the Fourth," so the deal was made. First came the War Savings Stamp pledges and that drive lasted three days. Lamar's share was \$95,000.00. The city went over the top.

Then came the planning for the Big Show. Every club in the city was assigned a stand, every church and every lodge. Thirty-six refreshment

stands were erected. Tents for the big Mexican bull fight, for the plantation show, for the "Forty-Nine" dance hall, for the girls' show. Then doll racks, paddle wheels, hit the Kaiser and every kind of device to build, besides getting up a big auction where everything was auctioned off.

All the garages gave tires and tubes, farmers gave cows, horses, calves and chickens. The ladies brought quilts and fancy work.

For ten days Wooden's desk was closed. On the eve of July Fourth the workmen came to erect the carnival and with Bob and Charlie directing, in four hours all was ready.

The morning of the Fourth was rainy but at midnight, as the last big tableau was sent off, lighting the Heavens with a large sign "JOIN THE RED CROSS," \$7,000.00 had been placed in the bank and 10,000 people were shouting praise of the greatest event in the city's history.

Charlie and Bob were found back in the office and with a smile Charlie said:

"I have spent vacations everywhere, but this beats them all. My vacation is over but the War Chest has \$102,000.00 more and from an advertising standpoint our business will be helped 25%." Bob smiled and said:

"It's a big game if you don't weaken."

"And on top of this there is the immens saving of time that the automobile effect in getting from town to town without regard to time-tables, and the quickness with which it takes you from place to place in town."

Growing Gasolene Need, Strict Economy Asked

The United States Fuel Administration authorizes the following:

The constantly growing demand for gasolene to supply airplanes and motor transports now with the American over-seas forces in France will necessitate continually increased shipments to the American Expeditionary Forces. Present stocks of gasolene, however, are now ample to supply the war demand and to allow the normal national consumption in this country to continue.

The abnormal waste which characterizes the use of gasolene in motor-propelled vehicles, however, must be brought to an immediate halt. Legitimate use of gasolene for internal combustion engine fuel does not mean that gasolene may be handled wastefully. The present method of distribution of gasolene is extremely wasteful, the product being handled carelessly and without the slightest regard for conservation in thousands of garages and supply stations throughout the country.

The Fuel Administration is urging everyone concerned in the production, distribution and consumption to eliminate every possible point of waste. Unless this is done, the present supply may in a short time become an actual shortage. If this condition develops the Fuel Administration will not hesitate to make effective enforced conservation methods, which, however, up to the present have not been necessary.

—The Official Bulletin-W, July 9, 1918.

Raised Railroad Rates to Extend Use of Automobiles

Even more general use of the automobile for business trips than heretofore is the condition foreseen by Vice-President E. B. Jackson of the Willys-Overland Co., as a result of the increased railroad fares.

"Even when figured out on a purely dollar-and-cents basis, traveling by motor car, at least as far as the moderate-sized five passenger car is concerned, is cheaper per passenger mile than travel by rail," said Mr. Jackson.

Military Need of Country's Roads Recognized by Government Board

United States Highway Council Appointed to Advise and Co-Operate with State Officials in Their Work

Governmental agencies dealing with highway problems fully recognize the vital military and economic importance of the country's roads, according to a letter from Secretary of Agriculture Houston to Arthur H. Fleming, Chief of the State Councils Section, Council of National Defense.

The Secretary, whose department administers the Federal Aid Road Act, stated also that the Government recognizes that it is necessary to construct, reconstruct or maintain roads essential for military and vital economic purposes and to defer action on roads not of this class; and that it is desirable, wherever possible, to use local materials for road building and maintenance in order to relieve railroad traffic.

Important highways, as described in the Secretary's letter, include only those utilized, or to be utilized, by the military establishment, those which carry a considerable volume of materials and supplies essential to war industries, and those which have a bearing on the production and distribution of food supplies, connecting population and shipping centers with surrounding agricultural areas.

All functions of Government agencies relating to streets and highways are to be co-ordinated in a body called the United States Highways Council, composed of one representative each from the War Department, the Department of Agriculture, the United States Railroad Administration, the War Industries Board, and the Fuel Administration.

To Prevent Delays.

The council was formed primarily to prevent delays, financial loss, and uncertainty incident to the method of taking up each highway problem in its turn with a separate and distinct Government agency. This board was

constituted at the suggestion of the Secretary of Agriculture. Through the office of Public Roads and Rural Engineering of the Department it will continue the close contact already established, both formally by law and informally by practice, with the State Highway Commission in each State of the Union.

The members of the council are: War Department, Lieut. Col. W. D. Uhler; Fuel Administration, C. G. Sheffield; War Industries Board, Richard L. Humphrey; Railroad Administration, G. W. Kirtley; Department of Agriculture, L. W. Page. Logan Waller Page, Director of the Office of Public Roads, Department of Agriculture, has been made chairman, and J. E. Pennybacker, Chief of Management of that office, is secretary.

The council utilizes the organizations of the forty-eight State highway departments with their trained personnel and their knowledge of local conditions and provides a single agency where all highway projects calling for governmental action of any character, whether it be a question of finance, of materials, transportation, or of war necessity or desirability, may be dealt with.

The council has provided a definite form on which applications for relief are to be made through the respective State highway departments, and has sent supplies of the forms to the departments. It emphasizes the great need of conservation of money, transportation, labor, and materials by restricting highway and street work to most essential needs. It ranks maintenance of existing streets and highways first, reconstruction of badly damaged streets and highways next, and it places last new construction justified only on account of vital war or economic necessity.

Consider Supply of Materials.

The Office of Public Roads and Rural Engineering and the Highways Council will actively consider the supply, for highway purposes, of road oils, asphalts and other bituminous road materials controlled by the Fuel Administration, and the matter of priority production for highway materials controlled by the War Industries Board. They will also, in contact with the Railroad Administration, aid in securing, so far as practicable, facilities for the transportation of road materials and supplies. Furthermore, the Office of Public Roads and Rural Engineering will act as the medium for furnishing information and assistance on highway problems, especially to State Highway authorities in meeting the various difficulties which they encounter.

When the United States entered the war the work of planning State highway systems, so that, as far as necessary and feasible, they would connect with the systems of other States, was well under way. This resulted from efforts to administer the Federal Aid Road Act, so that the roads of vital importance for economic, military and other purposes should first be dealt with.

The Federal Aid Road Act—involving an aggregate five-year expenditure, directly and from State and local funds, of \$160,000,000 in addition to at least \$200,000,000 spent independently each year by the States—provides that the States must maintain the roads and that before any money can be expended the roads must be selected and approved and plans, specifications and contracts submitted. It also provides that the Federal Government must inspect the construction of the roads.

Bright, Clean Showroom a Factor in Profitable Used Car Business

Separate Display and Improving Vehicles Before Offering Them for Sale Makes Money for Liberty Dealer at Detroit

How to make money out of used cars is a problem that vexes many automotive dealers and one that is generally discussed when motor tradesmen are gathered together. The methods used by one firm which has been very successful in this line—the Miller-Judd Company, Liberty distributors at Detroit—are given below. The article was written by Mr. Walter Judd, president of the Miller-Judd Company, and is reprinted from the Liberty Motor Car Company's monthly house organ, *The Liberty Bell*.



We never use the term "second-hand car" in selling. Just as in the sale of new cars, appearance is responsible for a good share of the buying attraction, so we give the used cars the same thought and careful attention as the new cars.

We have a separate, bright, clean showroom for the used car department with a salesman constantly on duty between 8 a. m. and 10 p. m., three hundred and sixty-five days in the year.

Every car is cleaned inside and out. The used-car buyer is no more pleased by dirt and grease than is the purchaser of the brand new six. Respect for his sense of order and cleanliness helps to overcome sales resistance.

There is an old saying among real estate men that for every ten dollars spent in improvements, twenty-five dollars may be added to the price. While the same rule may not hold good in the selling of used cars, it is a fact that there is no money lost in making cars presentable, and it does facilitate selling.

Old Tires Replaced.

We clean the motor, check up the battery, replace old tires with good seconds, put new mats in front and rear compartments if necessary, and if the upholstery is in poor condition we fit the car with inexpensive cushion covers. We repair curtains, put in new celluloid, and paint the car a good-looking, serviceable color.

We can always get back our total investment, because we never allow more originally than we are sure we can get. No dealer should attempt to make a sale by offering more for a used car than it is actually worth. Success depends on being able to say "NO." On the other hand, no

dealer should be compelled to offer less than a car is actually worth because of inadequate facilities for disposing of used cars.

Sometimes the prospective buyer is a better salesman in selling his old car than your salesman is in selling the new one. In order to overcome haggling, we make the prospective buyer our best proposition first, and then stick to it.

Quite often we agree to sell his used car for him, and guarantee a certain amount for it. We advertise it, and hold it for ten days to see if we can get what he expects. This works out very well because, as a rule, he is so delighted with his new car that he is anxious to accept our guarantee. And if, by any chance we have been able to obtain more for his car than the amount we guaranteed, he is more than pleased by the fair treatment accorded him.

Used cars are checked into our service department by the sales manager, who tabulates all necessary repairs. When finished, the repair bill is checked up and also the allowance made by the sales manager. Then the car is turned over to the used car department with the price to be obtained for it.

Liner Ads. Used.

We use liner advertisements quite often, displaying each car separately. A black-board in the showroom calls attention to an exceptionally good car. We allow chauffeurs, or in fact anyone, 1 per cent for the names of good used-car prospects who are subsequently sold.

Occasionally, we have to make several trades in order to realize the value of our first sale. This instance will illustrate what I mean. We recently sold two Liberty cars valued at \$3,887, taking in a Packard for \$2,750. We sold the Packard for \$2,000 cash and a Lozier. The Lozier was sold for \$450 and a King four. Then we sold the King for \$325. Figure it out.

We sometimes have to make an exchange for something that is absolutely useless for transportation purposes. The only allowance we make in such instances is whatever will be allowed by what is known in Detroit as the "junk dealer" who, I understand, disassembles the car for the different metals and the old rubber it contains.

There are, of course, innumerable little

things constantly coming up in connection with the acceptance and sale of used cars which are only to be handled properly as the result of years of experience. However, if David Harum is any kin of yours, the used car business doesn't need to worry you.

Jobbers Elect Members and Donate to Red Cross

As a climax to their meeting last month at Virginia Hot Springs, the delegates at the convention of the National Association of Automobile Accessory Jobbers donated \$10,265.23 to the Red Cross. The sum was realized in an auction for a pair of socks knitted and given by Mrs. L. Wolff. Each delegate made a bid and turned that amount into the fund. The socks were awarded to R. A. Stranahan, of the Champion Spark Plug Co., Toledo, on a bid of \$3,986.33.

Commissioner W. M. Webster announced that the following concerns were elected to membership at the meeting:

Jobbers—Archer & Wiggins Co., Portland, Ore.; Child, Day & Churchill, Inc., Spokane; L. Frank Saddlery Co., San Antonio; Hans Johnsen, Dallas; McCauley-Ward Motor Supply Co., Waco; Motor Accessory & Tire Co., Pueblo; James S. Remick Co., Inc., Sacramento; Salt Lake Hardware Co., Salt Lake City; S. Smith & Sons, Ltd., London, England (attention of Mr. J. H. Rose, 154 Nassau St., New York City); Whiton Hardware Co., Seattle.

Manufacturers—Bonney Vise & Tool Works, Inc., Allentown; The Dayton Wire Wheel Co., Dayton; Edison Lamp Works of General Electric Co., Harrison, N. J.; Howe Manufacturing Co., Chicago; Kelsey Wheel Co., Ltd., Windsor, Ontario, Canada; Krom-Nik Gear Co., Chicago; Lane Bros. Co., Poughkeepsie; Liberty Accessories Corporation, St. Louis; Luthy Hydrometer Co., Detroit; Motor Products Corporation, Ltd., Walkerville, Ontario, Canada; Mutual Wheel Co., Moline; National Spring Co., Newcastle, Ind.; Os-good Lens & Supply Co., Chicago; Pyrene Manufacturing Co., New York City; Racine Rubber Co., Racine; Russell Manufacturing Co., Middleton, Conn.; S. & M. Lamp Co., Los Angeles; U. S. Auto Bumper Co., Chicago; Wire Wheel Corporation of America, Buffalo.

Welding, Cutting and Brazing

Combined Welding and Preheating Table

BY DAVID BAXTER.

There is scarcely a welding shop that can get along without some sort of preheating table. Some of these preheaters are made and located without the least regard for convenience; with no eye at all for saving time and expense.

The table should have a place in the shop where there is good light and small chance for the wind to blow directly on the heated castings. An ideal place, perhaps, would be directly under a skylight, with plenty of room to work around it on all sides.

With this arrangement the torch operator can work on crankcases, etc., without being obliged to turn them over to disturb the preheating fire, as is sometimes necessary where the table is placed against the wall. There are so many welding shop owners, however, that cannot spare the room to have the table in the center of the room. Therefore a combined preheat-

ing and welding table, similar to the one shown in the cuts, may be best described and recommended. This table is cheap, although of sturdy construction, and may be made at home quite readily.

Has a Cooling Oven.

Beneath the valve wheels may be seen an arch-shaped opening. This is the outlet to what is termed the cooling oven. The castings are placed therein to cool after they are welded. They are buried in asbestos scraps which exclude the air and permit them to cool slowly, lessening the danger of contraction cracks.

The larger castings are lifted down with tongs as soon as the weld is completed, and rolled into the oven through the arched opening. The smaller ones are dropped through the top of the table into the oven. The top of the table is made up of fire-bricks which are easily removed to permit the castings to be dropped through. This sort of cooling oven is almost perfectly air tight in so far as sudden blasts of cold air are concerned. A casting bedded therein

pile near the table a great deal of time is saved.

Use Asbestos Paper.

To the left front of the table is a roll of asbestos paper. This is always within reach of the operator for the purpose of covering jobs of welding to prevent cracking. Also for protecting the operator from the heat of the preheating fires, and for padding his hands when it is necessary to shift a hot piece in a hurry. Asbestos paper is often used to insulate, as it were, some of the different jobs to prevent loss of heat by conduction. Layers of it are placed under the castings to prevent the heat of the welding from escaping through the metal parts of the welding or leveling table. This is especially true of jobs that are not preheated, such as wrought iron or mild steel jobs.

It is an established fact that heat will escape from one piece to another if it comes in contact for any length of time. Asbestos is a good non-conductor of heat, therefore if it is placed between the two metals it will effectually prevent the loss of much heat that can be utilized to hasten the welding process. The weld can also be expedited by employing pieces of asbestos as reflectors. These reflectors are placed in such a manner as will tend to throw the heat back to a central point. In other words, so they will throw the heat back to the weld.

An asbestos paper which is made especially for the welder is frequently used to cover the backing where some missing part of the job is being built up with the torch. For instance: if a fire brick is used to flow the filler metal over, a piece of asbestos placed over the brick will prevent the metal from sticking to the brick. The torch operator will find many ways in which to make use of asbestos paper. A quantity of it should always be kept within easy reach.

To the left, on top of the table, is shown a small job covered with asbestos. This covering consists of small pieces torn at random from the roll.

The second picture shows the top of the table which is made up of a number of fire bricks lying flat upon cross-bars of angle iron. The bricks are placed loosely in rows so that any or all of them may be removed at any time. One or more of them may be taken out in order to light one of the preheating burners. Or they may be removed to allow any irregular projections on the casting to be welded, to protrude below the level of the table top. In this way the job may be leveled to bring the spot to be welded into a desired position.

Perhaps the chief reason for employing fire bricks as table tops is because they do not warp or crack from the effects of successive heating and cooling. Nor do they



Side View Welding Table.

is almost certain to cool slowly.

The oven is a square sheet-iron box about the size of the table top. It may be made from junk metal procured at most junk-dealers. The corners are put together with the welding torch; the arch is cut out with the cutting torch.

To the right at one end of the table is shown a pile of fire bricks. These are kept on hand to use when it is necessary to construct a makeshift furnace over a casting to be welded. They are sometimes employed in leveling a casting, or in backing up wide, flat welds. By keeping them in a

A side view and a top view of the table are shown in the pictures. In the first may be seen the burner valves which lead to gas burners located at different points under the top of the table. Having a number of burners scattered over the area of the table permits the operator to preheat several smaller jobs at one time. Or to preheat a fairly large job without danger

melt or burn easily when coming in contact with the welding flame. Fire bricks are poor conductors of heat, therefore save much heat, which is another reason for using them.

To the left, in the table-top picture, is shown a cylinder block of an automobile engine. The casting rests in the recommended position for preheating. That is: it is placed to allow the preheating flames to pass through the bores. The bore is first coated with graphite and oil to prevent the heat from spoiling the surface. After the preheating fire is lighted the entire casting is covered with strips of asbestos paper until ready to weld.

Grating Can Be Used.

Beneath the cylinder casting will be noticed a cast iron grating. Several of the bricks have been removed from the central burners, and the grating put in their place. It is more convenient for such jobs as crank cases, cylinders, pulleys, housing and similar work.

To the right of the picture will be seen an old crucible. This is a satisfactory container for flux as it does not rust. And the wide mouth permits free access to its contents.

Aside from the corner location the above described table may well be used as a model for many welding shops. It is cheaply and easily made right in the welding shop, with but very few tools besides the cutting and welding torch. The dimensions are about four by six feet, by three feet high. It is constructed almost entirely of angle iron procured from the scrap pile. The legs and frame are cut to length with the cutting torch, and welded into a solid shape with the welding torch. Lengths of narrower angle iron are used to form the cross-bars. Two pieces are used to form each bar. These are fitted together with the angles inward, forming a shelf on each side to hold the rows of brick.

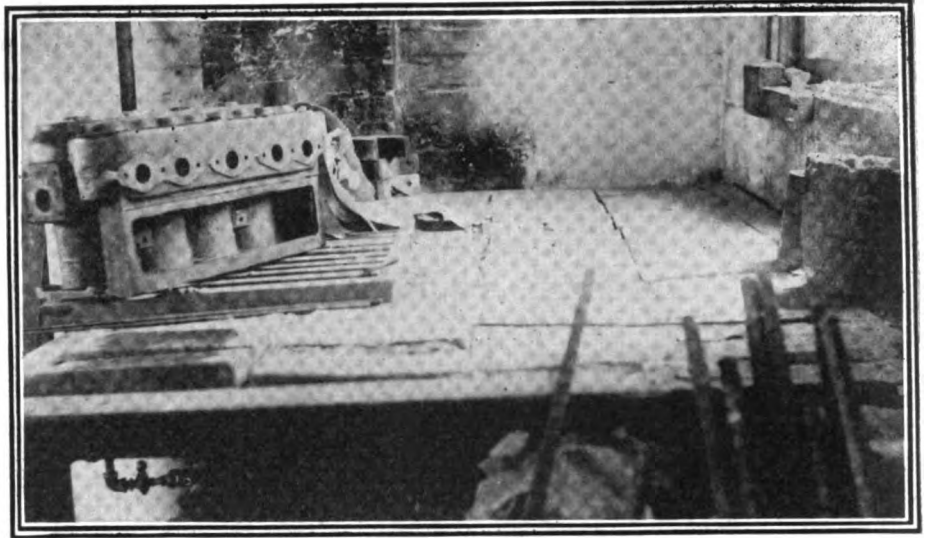
The gas manifold is made from an old piece of pipe with the valve nipples welded to it. The ends are also welded in. The whole contrivance is made substantial by welding it to the frame of the table.

The double valve arrangement near the end of the manifold is for the purpose of attaching hose connecting portable burners for preheating larger jobs upon the floor.

It is surprising what a number of different jobs may be preheated and welded on the table described in the foregoing article. The welder who has been doing his work principally upon a forge will find that a table similar to this will more than pay for itself in a very short time.

Another Handy Device for Welding Shops

Some kind of anvil is almost indispensable to the welder. Whether it be a com-



Top View Welding Table.

mon cast anvil like the one shown in the cut, or whether it be an expensive steel anvil, it matters not; it is difficult to get along without one. Where the welding department is located in the blacksmith shop it will of course be unnecessary to provide a special anvil. But where the welder has no connection with a blacksmith shop he will find it necessary to have an anvil.

Probably the most convenient kind is a portable one. It may be moved any place about the shop where it is desired to work. The average anvil block is not the best adapted to this purpose. It is too cumbersome and heavy, while to put it on wheels or castors renders it unstable.

Therefore the neat device shown in the cut was evolved. This is cheap and looks workmanlike in appearance. It occupies but very little space and may be easily moved around. Of course it will not stand any heavy sledging, but that is not for what it was constructed; heavy sledging is hardly necessary in the average welding

shop. However, one may do considerable hammering as the tripod is made of wrought iron welded together with the torch.

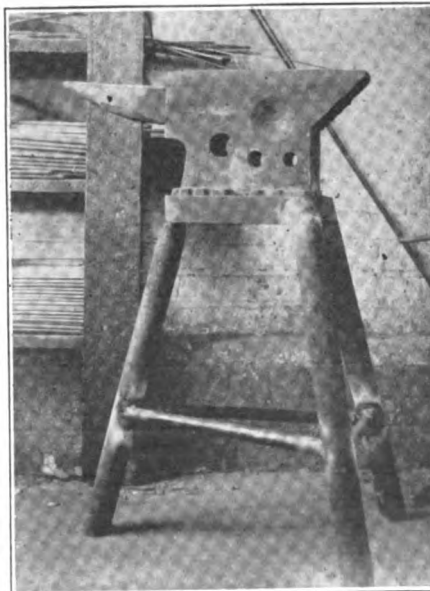
The illustration shows quite plainly the construction of the anvil stool, so a detailed description is not needed.

Anvil Has Many Uses.

For the benefit of the beginner, a list of a few uses of an anvil in the welding shop may not be out of place. The most obvious of these are straightening of rods, the bending of hooks and eyes, the cutting of rods, bolts, etc., the tapering of rods, and dozens of other small jobs.

For use in actual welding the anvil is found to be just the thing for giving the welded joint a smoother finish, making a better weld. For instance, suppose two pieces of half-inch rod are to be welded together. First, heat the ends to be joined until they are soft, then hammer each one down to a wedge-shape. Now place one wedge on top of the other and melt them together with the torch. Then, while the joint is still hot, hammer it all round with a flat hammer. Turn the rod over and over, hammering the entire surface of the joint until it presents a smooth clean finish. This process not only looks better but really makes a stronger, closer-knit weld.

This one example will serve to show beginners what can be done toward making the anvil play a part in oxy-acetylene welding. They will soon find numerous other small jobs that can be done by combining the anvil and torch.



Welding Shop Anvil.

"I haven't paid a penny for repairs on my machine in all the ten months I've had it!" said the motorist.

"So the man who repaired it told me!" said a friend in corroboration.
—*Hardware Dealers' Magazine.*

(To be continued in August.)

[illegible]

Twenty-five per cent of the Master Trucks, Inc., factory force at Chicago, has been called to the colors and it is expected that more will be called soon. The company's service flag now contains 27 stars, several having been added lately. No exemptions on industrial grounds have been asked by the company, according to Eugene Goldman, vice-president and general manager. Skilled mechanics have been difficult to obtain, but Mr. Goldman believes he has been fortunate in being able to fill the breaks in his factory force with efficient men very easily.

[illegible]

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Mechanical and Engineering Problems

Car Slowing Down in High Speed

Question: I have an Overland Model 90 touring car from which I have until just recently been able to get a speed of from 50 to 55 miles per hour, upon three or four occasions on a concrete road it has reached a speed of 58 and 59 miles per hour. The car has been driven slightly over 10,000 miles and is always kept in first class mechanical condition. The motor has been completely overhauled as to bearings, wrist pins, bushings, etc. Its speed was just as good after this work as before.

The valves and ignition are both set or timed as they were originally but here lately it is hard to get even 45 miles per hour from this car. It has a world of power and plenty of pep but where it would formerly run 50 to 53 miles per hour, it will now do only about 40.

I know there is a reason but as yet have been unable to figure it out. I have tried advancing the ignition one tooth in the generator-distributor gears. This gives me a slight increase in speed but for hill climbing and slow pulling it caused the motor to knock so bad that I set it back again.

Could it be that the natural wear in the timing gears, generator chain, etc., could be the cause of this loss of speed?

It is my intention to strip this car and make a speedster of it for racing on small tracks around here and I want to increase the speed of the car to at least 64 miles per hour and could stand even 70 miles per hour. I realize that stripping it and reducing the weight will increase the speed slightly but this alone will not be sufficient, consequently I am asking you to advise me the most practical way to do this.

By installing special gears I suppose I could increase the speed but I don't know what ratio nor where to get these gears made to order. Could I have the valve posts in the motor block enlarged and new and larger valves installed and would this materially increase the speed and where could I get this work done?

Where would I obtain special gears and what ratio would you advise? If neither of the above methods are right please let me know what you would suggest. Also please tell me why the car as it stands has lost from 10 to 15 miles per hour and suggest a remedy. I would like an early answer and if you will help me out with a little advice and information it will surely be appreciated and am willing to pay for this information if there is any charge.

—Auto Co., Ind.

Answer: In order to find out why you have lost speed it will be necessary to go

The mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and consulting engineer with the Western Electric Co. He is now service manager for the Chicago Republic Truck Co. When shop information is desired, write Mr. Hinrichsen, care this office.

through the entire car very carefully. The engine may be developing the same speed and power and it may be something entirely different that is holding you back. This fault may not even show at a speed lower than 40 miles per hour but above that may hold you back a good deal. Go over your wheels carefully. See that all bearings are right and also—most important—see that the wheel alignments are correct and that no wheels are sprung. If you have demountable rims, see that they are all on straight and tight.

Next look after your brakes. The slightest drag there will affect your speed. The differential, transmission, drive shaft and clutch should also have the closest inspection and finest adjustment possible. All this will have to be done if you are going to race so there will be nothing lost. If the loss in speed is in the motor itself, the chances are that it is due to a leakage. Look after both valves and rings and I think you will find it.

In preparing the car for racing, it will be necessary to take into consideration the kind of track you expect to race on. I assume from what you say that your racing will be done on half-mile, circular, dirt track. If this is the case, power rather than speed is required—45 to 50 miles per hour under such conditions should always get you in on the money, and you will find it difficult to stay on the track at a much higher rate of speed. For this work I think you will find your present gear ratio about right.

In stripping the car, always bear in mind that your primary object is to reduce the air resistance and lower the center of gravity rather than to reduce weight. A few extra pounds will not hurt you but any flat surface that catches the air will hold you back. Get the stream-line system. Build as though you were building a boat.

A number of things can be done to make the engine faster. I do not think it would be advisable to ream out the valve seats. You might leave too thin a metal between the valve chamber and water jacket. A better plan is to have the valves open farther. This can be done by a special cam

shaft with higher cams. If you do this, the cams should be made to open and close the valves suddenly and not gradually as they do now. What you want is so-called "lick" cam. The valve springs should also be stronger.

Lighter pistons will help. These can be made from an aluminum alloy such as magnalite and these pistons should be arched on the top in order to increase your compression.

All engine bearings should be carefully set. It is better to have them a little loose than too tight for this kind of work.

Of course all this is general advice, but the main points are outlined. Each motor is an individual and what will do in one case will not apply to another. You will have to make tests to determine the proper valve and ignition timing for the work you have to do. I would suggest that if you wish the parts mentioned, you take the matter up with the Overland people. They may have just what you want. Pistons may be obtained from the Magnalite Co. and special cam shafts, gears, etc., from the Puritan Machine Co. of Detroit.

* * *

Question: Can you give me the firing order of the cylinders in an Oakland six?

Answer: The firing order will be either 1-4-2-6-3-5 or 1-5-3-6-2-4. If I remember correctly these motors were put out both ways. It is very easy to tell, however, by turning the engine over slowly by hand and watching the intake valves. Their order of opening will tell you the firing order of the cylinders.

Ohio Convicts Employed Building Military Roads

Military roads are being built in Ohio by the aid of convict labor. Fifty prisoners from each of the state prisons have been organized into emergency squads to rush to completion the National Highway in Muskingum county, so that road may be used extensively for the transportation of army trucks and other military supplies. The number of prisoners will be doubled as the work proceeds.

Governor Cox expects the use of convict labor to lead to a boom for good roads in Ohio. In a letter to the National Committee on Prisons and Prison Labor, the statement is made that the road contractors gave up their contracts in compliance with a war emergency request so that the state could rush work with convict labor. Private contract convict labor is prohibited, but the state may employ prisoners in road building. The men regard detail to this work as an honor.

Install a Curtis Air Compressor



The Curtis Sign

Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.

Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.
1515 Kienlen Ave., St. Louis, Mo.
Branch Office—530-U Hudson Terminal, New York City

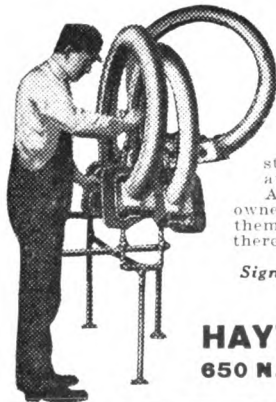


I am \$5,000 00 Better Off Said Gibbard

I call to you Men of action to read this message. The above is the statement of an honest, straightforward American Citizen. I am putting it to you without one added stroke to give it embellishment. I reproduce here the picture of Mr. N. E. Gibbard, Charlotte, Michigan, and his exact statement. He says, "I am \$5,000 better off than eighteen months ago when I bought a Haywood Tire Repair Equipment." MEN—young—middle age—old men beyond the draft age—Men who are now in business or working for wages, here is a real sincere business success open to you. I have 500 places to be filled now.

I Must Have 500 Men

To Fill These Places Within 60 Days



I have a big interesting book to send you—a book about tires—it tells all about them—how they are repaired by Haywood method—explains this business—gives inside figures and profit. Gives actual proof of success—letters of others who are now operating Haywood Shops and making big money. What these men have done you can do. \$2500 to \$4000 a year is conservative. One machine will give you a start. You can see business around you—everywhere there are automobiles there are tires that need repairing. You know that. All you do is open a shop—put out a Haywood sign, and auto owners will come to you, welcome you and the service you bring them. If you haven't seen the "Sign of the Man and Machine" there is a big opportunity awaiting you.

Sign the coupon and mail it today, or send a post card or letter.

M. HAYWOOD, President
HAYWOOD TIRE & EQUIPMENT CO.
650 N. Capitol Avenue INDIANAPOLIS, IND.



WRITE TODAY

OPPORTUNITY COUPON

M. HAYWOOD, Pres HAYWOOD TIRE & EQUIPMENT CO.
650 N. Capitol Avenue INDIANAPOLIS, IND.
Gentlemen—Please send full particulars of your Scientific Tire Repair Service and details of your co-operative plans.

Name.....

Address.....

Electric Signs Help Government and Business Men in War Time

Glowing Letters Sell Liberty Bonds and War Stamps---Also Show Motorists Way to Garages

BY D. H. HOWARD,
Advertising Manager,
Commonwealth Edison Co.

Restoration of bright nights for the dark nights of last winter, which was brought about as a wartime necessity by an order of the Fuel Administration of our government, has done much to improve the morale of a war-weary public.

There are certainly ample causes for depression during these trying times, especially among those of us who have sons, husbands, brothers or sweethearts in the service, without putting out the lights to further depress the stay-at-homes who must supply the food and funds to maintain our boys at the front, unless there is absolute necessity for such action.

With the countermanding of the Fuel Administrator's order, streets that had been dark and foreboding on Thursday and Sunday nights of each week immediately resumed an attitude of cheerfulness and calm, and burst into brilliancy. The movies, which had been dark and foreboding on these particular nights, again invited the lonesome pedestrian to enter and forget his troubles in the antics of a Charlie Chaplin or a Douglas Fairbanks comedy.

Not only that, but our own government is giving us the opportunity, through the medium of the movies, to witness our boys at the front. We are invited to "Follow the Flag to France" and, through the medium of official United States war films, see what our dollars are doing "over there."

And what agency is there which gives greater aid to these wartime activities, the sales of Liberty Bonds, Thrift Stamps, etc., at home than the electric sign?

Easy to Find Garages.

This is the season when the garage man wishes to make it easy for the car owner to find his establishment. Consequently we are advertising to the garage owner just at present with good results.

When the government order rescinding the lightless nights provision was received, a letter was sent to every electric sign owner in Chicago containing this paragraph:

"It is evident from this that you will not only be permitted to burn your sign and display lighting on Sunday and Thursday evenings, in addition to burning them all of the other nights in the week in any way

that you wish, but it is also made clear by the notice that the people in charge of the sale of Liberty Bonds consider it a matter of the utmost importance to make a liberal display of this most desirable kind of advertising, both for the effect which it will have on the attitude of the people on the streets and for the effect it will have on the prosperity of the merchants using the signs. In other words, the Liberty Loan committee apparently thinks it a most distinctly patriotic thing to burn your sign and display lighting most liberally."

We must remain cheerful withal and "carry on" until this fearful war is won. The central station is, therefore, in a better situation than ever before to brighten things up and make it easier for those of us who can not go to the front to remain contented and active at home. Electricity, through the medium of household electrical helps, washing machines, vacuum cleaners, ironing machines, etc., helps in no small measure to fill the gaps left by labor called to the front and by dispelling the gloom in our stores and in our streets.

Bearings Service Company Has Facilities for Rim Users Twenty-Two Branches of Big Concern are Now Prepared to Care for New Work

Unusual interest has been manifested in the announcement of President R. S. Lane of the Bearings Service Company that his concern has made all preparations to offer

to the motoring public a complete service the public that we feel capable of handling the rim proposition properly.

placement work on Baker, Detroit, Perlman and all similar types of rims. This includes practically all cars made, at least such a large majority that our organization will find a very heavy task on its hands.

"The rim service will be almost identical with that now being given on bearings. We will have our men thoroughly trained on rim equipment, and maintain a complete stock of various sizes and styles of rims at each branch. The owner, garageman and dealer will be able to get the rims they need without delay or inconvenience. Although there has never been any attempt made to nationalize rim service yet we believe that it can be done. In addition to our twenty-two branches we also have five hundred distributors handling our bearing service, all of which will be utilized in the rim service.

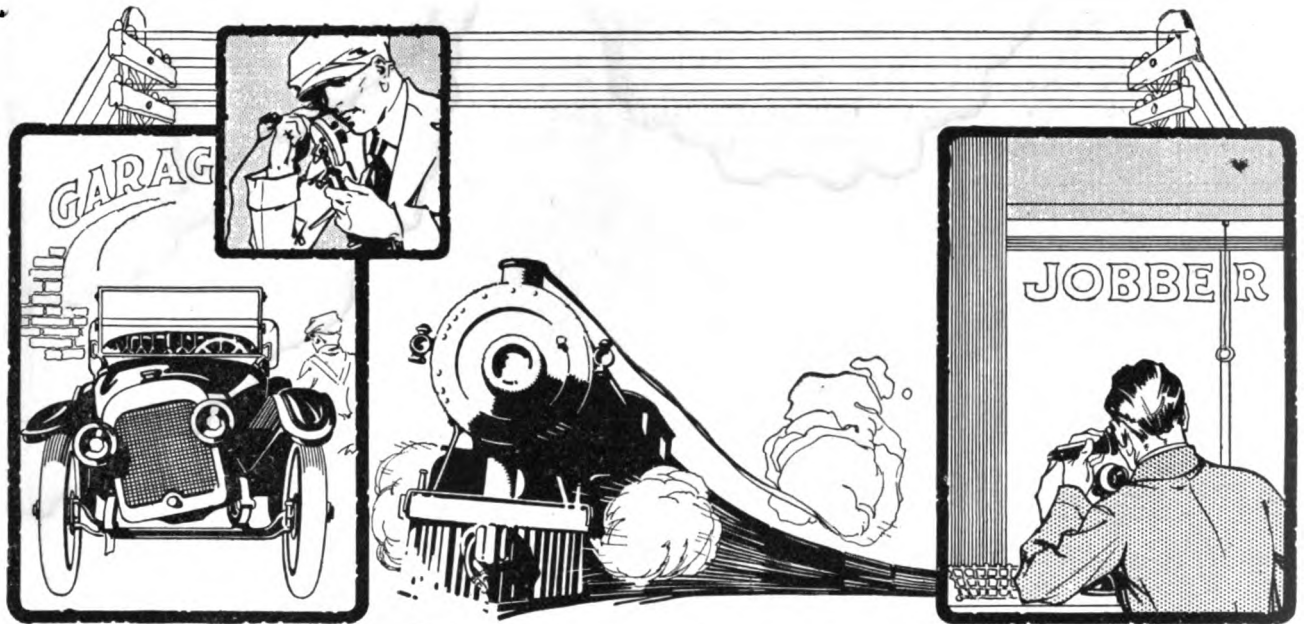
"Few people realize the full importance of service to the motoring public today," continued Mr. Lane. "It is a gigantic task, requiring an investment of millions, and an organization peculiarly fitted for the work. There has been considerable dissatisfaction in securing proper replacements for rims and if we can offer a service anything like as satisfactory as our bearing service it will be far better than any available rim service of the past, and the owner, dealer and garageman are going to appreciate it tremendously."



R. S. Lane.

on rims. This announcement further states that this new rim service will be added to the work at each of the twenty-two service branches of the Bearings Service Company.

"For some time we have realized the need for a nationalized service on rims," said Mr. Lane, "and our organization for service on Timken, Hyatt and New Departure bearings is working so well and has created such a splendid impression on



RUSH!

When the hurry-up order comes—when an excited customer rushes in and wants a new spring *at once*—when every minute counts—when you are placed on your mettle by a demand that seems almost out of reason— How will you meet it?

Will you simply hold up your hands and say "It can't be done?" Or will you

Get The Nearest Harvey Jobber On The Wire—

tell him your needs, and send the customer away pleased at the knowledge that his car will be on the road again, in better shape than ever before, within a few hours?

Make use of Harvey Service. It is designed to help you in emergencies.

There's a Harvey Jobber Near You

Drop us a card and we will send you his name and our catalog giving measurements, weights and sizes of over 900 different styles of Springs and other valuable information that you should have. Write today — you may need Harvey Help tomorrow.



Harvey Spring & Forging Co.
922 - 17th St. **Racine, Wis.**

Shaler Official Organizes Baseball League in Waupun

Last year the "semi-pro" baseball championship for the State of Wisconsin was won by the Waupun team of the Tri-County League. Robert B. Dunlap, sales

manager of the C. A. Shaler Co., makers of Shaler vulcanizers, was president of the league and secretary of the Waupun club.

This spring he decided on an entirely new experiment for a small town. (Waupun boasts of only 3,500 inhabitants.) The idea was to give the factory employes an opportunity of playing the game as well as seeing it played.

Accordingly a Commercial League was organized, four Waupun firms—The Shaler Company, The Paramount Knitting Company, Libby, McNeil & Libby, and The Palma Shoe Company—entering teams.

Each concerns completely equips its own team. The park is provided by the companies, and, in fact, there is not a penny of expense to the players or spectators, the admissions being free. The management of the league and of each team, however, is in the hands of the employes.

A pennant has been offered by the Burghardt Sporting Goods Co., Milwaukee. Games are played Saturday and Sunday afternoons and the spirited friendly rivalry furnishes the sort of wholesome recreation that for a long time has been desired. The experiment is being watched with a great deal of interest by manufacturers in other towns and if successful will undoubtedly be rapidly adopted elsewhere.



Shaler Baseball Team.

"It Pays to Advertise"

Concerning the wisdom of advertising during war times, an editorial in the Chicago Evening Post draws some interesting conclusions from comment made by certain German newspapers. Says the Post:

"The Tageblatt and the Logal Anzeiger of Berlin both gloat over the fact that American advertising is disappearing from the foreign press. The Anzeiger asserts that Latin-American publications no longer carry the advertisements of American firms and that one Buenos Aires advertising agency declares 83 per cent of its clients in the United States have canceled their contracts.

"The Tageblatt says: 'Their much-talked-of captains of industry have canceled advertising contracts everywhere,' and the Anzeiger adds: 'In the United States there is not a paper which has not suffered a loss in its advertising lines, and that despite the fact that last year showed an increase in the millionaire class of 973 individuals.'

"Whatever element of exaggeration there may be in these sweeping statements, the substratum of truth illustrates how the slightest show of weakness on our part furnishes hope and encouragement to the enemy.

"The joy of the Berlin newspapers is great over the alleged evidence of American timidity. 'The war has terrorized the American nation,' declares the Anzeiger, 'but not the Germans, for a perusal of their periodicals will

show that manufacturers still advertise even if they have not the goods to deliver.'

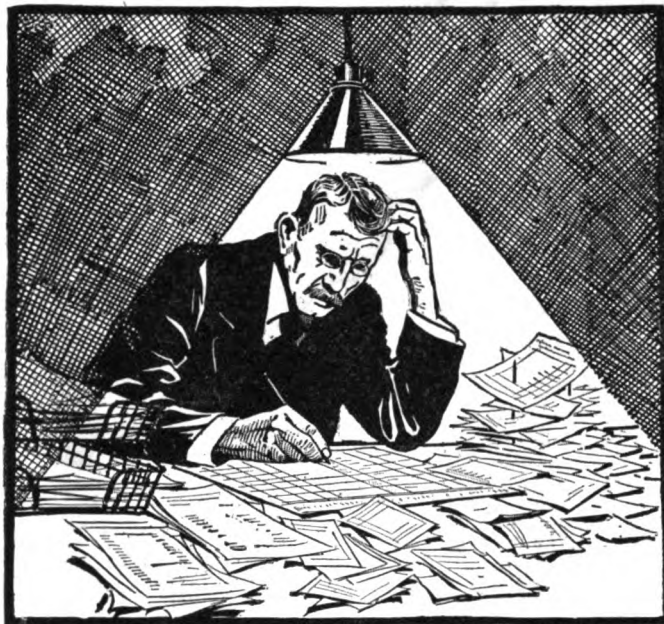
"Moreover, the Tageblatt is right when it says: 'It pays to advertise in war as well as in peace.' It not only pays, but it is fatal folly in a war such as this, not to advertise.

"If it be true that our manufacturers have canceled their contracts with Latin-American and other foreign mediums of publicity, they are simply making it easier for the enemy to regain these markets after the war ends. Now is the time to cultivate the acquaintance and patronage of South America and other world markets, and even if goods cannot be sold and delivered, space can be used for commercial propaganda that will bring rich harvests later.

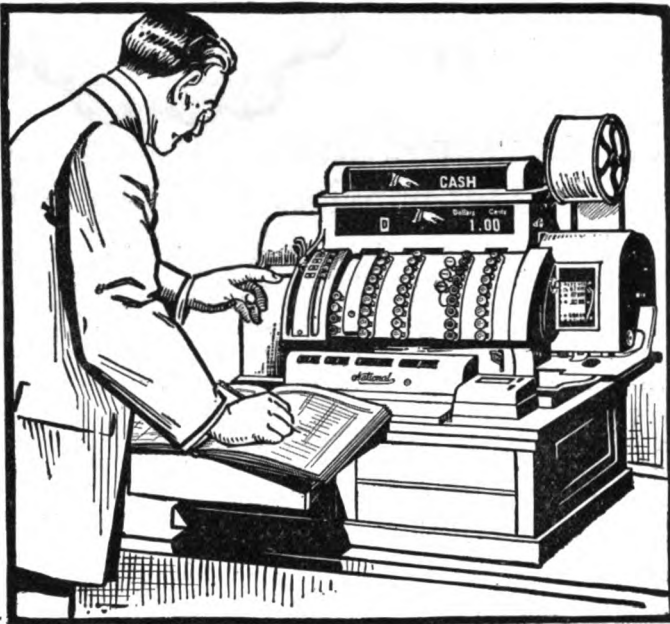
"Nor is neglect of the home market in time of war a wise thing for any manufacturer or merchant. The value of pre-war publicity can be destroyed by a break in continuity. The public easily forgets, and the firm that has kept its name before the public through the season of war thrift, will be favored with its patronage when days of peace restore normal conditions.

"These, of course, are selfish considerations.

"Above them we put the reflection that commercial and industrial America cannot afford to furnish gloats for the enemy by any show of weakness or timidity. Be a business optimist, a persistent booster, and let your confidence in America shout its challenge in the ears of the foe."



The old way



The new way

A man should not do the work a machine will do for him

A merchant, with all his troubles, should never do the work that a machine does better and quicker.

Our newest model National Cash Register makes the records which a merchant needs to control his business. It does fifteen necessary things in three seconds.

Without the register a man cannot do these things in half an hour.

With the register, even a new clerk can do them just by pressing the keys.

Our new electric machines are as much better than old machines as an up-to-date harvester is ahead of a sickle for cutting grain.

The latest model National Cash Register is a great help to merchants and clerks.

It pays for itself out of what it saves.

Merchants need National Cash Registers now more than ever before

— FILL OUT THE COUPON AND MAIL TODAY —

Dept. 3305, The National Cash Register Company, Dayton, Ohio.

Please give me full particulars about the up-to-date N. C. R. System for my kind of business.

Name _____

Business _____

Address _____

Identification Plan Proposed to Eliminate Stealing of Cars

C. E. Larson Thinks Photograph of Owner on Card Containing Description of Automobile Would Lessen Thefts

Many methods have been advocated to prevent the stealing of automobiles, but one of the most practical plans is one proposed by C. E. Larson of Minneapolis, Minn. Mr. Larson is an official of the Marvel Machinery Co., maker of Marvel re-boring machines, and he outlines his idea in a recent letter to the American Garage & Auto Dealer as follows:

"For some time I have been contemplating taking up, through the medium of your valuable magazine, the subject of starting a campaign, or crusade, for the purpose of creating a public opinion favorable to the enactment of a law that would eliminate, to a large extent, the stealing of automobiles, which is now so prevalent.

"I have an idea, which I believe, if laws could be enacted, would practically put a stop to this, and my plan is this: that whenever a dealer sells an automobile, which in every instance calls for the securing of a new state license, that a law be enacted requiring him to apply, at the same time (for the purchaser), for an identification card, this card to contain the photograph of the purchaser, the state under which the license is issued, when it expires, make of car, license number, engine number, name and address of the purchaser, his signature and the signature of the secretary of state.

"On the reverse side of this card will appear a form of bill of sale, this to be filled out by the seller on the re-sale of the car, and will contain the following information:

"Name of city, date line, name and address of seller, and a statement that he is the lawful and rightful owner of the car, that he is selling and conveying same to the party, giving name and address, license number, engine number, make of car, and his signature, which must be taken in the presence of witnesses.

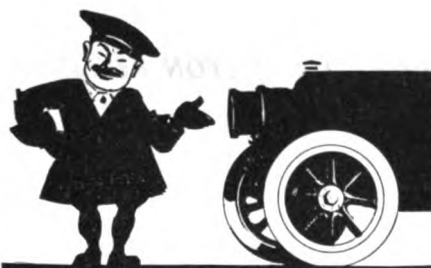
Card with License Request.

"This card to become the property of the purchaser of the car and to be returned to the secretary of state, together with application for a new license number, with photograph of the new purchaser, and new identification card issued, the old card to be retained as a matter of record in the office of the secretary of state.

"A plan such as this would practically eliminate the question of automobile stealing because should a man attempt to forge the card, which could easily be done, and

it should develop that the car had been stolen, which will be determined immediately upon return of the old card to the secretary of state, you will then have the best evidence against the seller, as you will have his signature, executed in the presence of witnesses, and you also have his photograph, and it certainly would make it difficult for him to get away with it.

"If you would start an agitation along that line, especially with the American Automobile Association, steps might be taken by which similar legislation might be brought before the respective bodies of legislature in different states."



JOY

He's happy now because he knows
His tires are strong and sound;
There are no holes to let in dirt
Each time the wheels go round.

A Vul-Kit sealed each little cut,
Of course he had a few,
Those tires won't bust and spoil a tour,
They're good till they wear through.

SHALER VULCANIZERS

MAKE ONE TIRE OUTWEAR THREE

Some Shaler Business Verse.

Columbus Tractor Co.

Succeeds McIntyre Firm

The Columbus Tractor Co., capitalized at \$1,000,000, which was recently organized to take over the McIntyre Manufacturing Co., maker of Farmer Boy tractors, announces the appointment of E. B. Moon as director of sales and advertising.

The Columbus company also announces the appointment of Gebhard Jaeger as production manager and general superintendent. He is the largest manufacturer of concrete mixers in the world. Frank H. Nagle has been appointed assistant secretary and treasurer, in charge of accounting and purchasing.

The main duty of non-combatant Americans briefly may be stated as follows:

Increase production, economize in consumption, lend your savings to the Government, and hold your Liberty bonds.

—Official Bulletin, Washington, D. C.

JAPAN SUBSIDIZES MOTOR CARS

Progressiveness of Japan is shown by a law enacted by its Government to encourage highway transportation by granting subsidies to owners of motor trucks and passenger automobiles.

Instead of discouraging use of motor vehicles by unwise legislation and discriminatory taxation, the Japanese government now awards subsidies ranging from \$250 for small imported cars to \$1,000 for motor trucks built in Japan. The English, French and German governments have paid subsidies for some years to owners of motor trucks that met the military specifications, but Japan is the first country to give official recognition to the utilitarian value of the passenger automobile.



IN THE SERVICE OF OUR COUNTRY.

Hal K. Sheridan, winner of much fame as a touring contest driver of White cars, is now a major in the Ordnance Department of the Army. He is stationed at the plant of the Millitor Co., Jersey City.

A. C. Miller, vice-president of the Miller-Judd Company, Detroit, Liberty distributors for Michigan, recently completed a course of instruction at the Great Lakes Training Station and was commissioned an Ensign in the Navy.

Arthur Acason, brother of President H. W. Acason of the Acason Truck Co., Detroit, is a First Lieutenant in the U. S. Aviation Corps. He has been piloting a 450 horsepower Caproni plane in France for several months.

Henry H. Hower, formerly advertising manager for the F. B. Stearns Co., and later division manager of the Willys-Knight department of the Overland factory at Toledo, is now production manager of the naval base at New London, Conn.



A ONE-PIECE PISTON RING

Simplicity is the outstanding feature of the GILL PISTON RING, and perfection in all results on account of the efficient joint which absolutely prevents the escape of compression and the passage of oil into the combustion chamber. Made from individual gray iron castings of high quality, GILL PISTON RINGS are being used successfully in thousands of cars, tractors and gasoline engines of every description today.

Perfect Piston Packing is the keynote of a successful motor and can be achieved by the installation of GILL PISTON RINGS.

Ask your jobber for GILL PISTON RINGS or write us today.

THE GILL MFG. COMPANY
357 W. 59th Street, Chicago

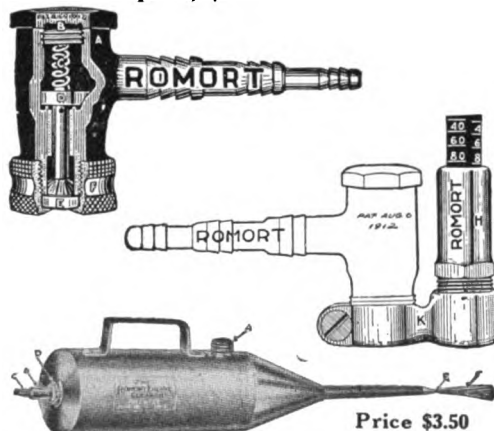
**For
garages
and
service
stations**

STYLE "A" VALVE has no equal for free-air stations. Withstands rough usage or abuse. Air released only when the valve is pressed onto the tire.

List price, \$3.00.

STYLE "A" ROMORT TIRE TESTER ATTACHMENT gives the service station a permanent holder for its gauge—ready for instant use by the public. Every garage with free air should be equipped with Romort Tire Tester attachment.

List price, \$1.50.



Price \$3.50

ROMORT ENGINE CLEANER has no equal for cleaning the dirt and grease from automobile engines. Holds two quarts of fluid—common coal oil is best.

*All jobbers carry Romort specialties.
Write for literature.*

Manufacturers
ROMORT MFG. CO.
Oakfield, Wis.

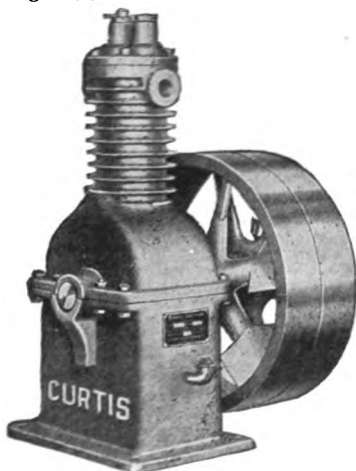
Sales Dept.
THE ZINKE CO.
1323 S. Michigan Ave.
CHICAGO

**ROMORT
SPECIALTIES**

Accessories and Garage Equipment

CURTIS COMPRESSOR HAS PATENTED LUBRICATION SYSTEM.

One of the main reasons why the Curtis air compressor has assumed a prominent place is due to its patented system of lubrication by means of which air free from oil is furnished. The difference between the ordinary splash system, in use in other machines, and the Curtis controlled splash system may be compared to beating water from a pan with a flat stick, and then trying to empty the same pan of water with the edge of a knife blade. The first system drenches every part of the interior of the compressor with oil and saturates the air on its way to the tire, which, as every garage man and motorist knows, shortens the life of the tire, as oil rots rubber. The second or Curtis system with its knife blade throwers takes from the oil bath just sufficient oil for lubrication, and the oil which reaches the cylinder is further regulated by being thrown on a pin of pre-determined size so that just the proper amount for lubrication and no excess is delivered to the cylinder. None is left to work over into the discharge line.



The Curtis, because of this patented method of lubrication, runs 14 times as long as competing makes, using the same amount of lubrication oil, yet successfully lubricating every working part.

Other features found only in the Curtis compressor are:

1. Hand unloader, which permits starting

against full tank pressure without burning out the motor, blowing fuses, burning or jumping of the belt.

2. Safety cage, which prevents possibility of broken valves dropping into cylinder and wrecking the machine.

3. Fan flywheel, which throws a current of air against the cylinder, thereby assists in cooling.

4. Valves inspectable without removing the cylinder head; cylinder head can be removed without loosening a pipe connection.

5. High and low level oil filling gauge, showing at a glance the amount of oil in the crankcase.

6. Bearings of white metal, die cast, adjustable, renewable and non-cutting.

Curtis compressors are handled exclusively through the jobbing trade.

NEW MOTO-METER FOR FORDS ON MARKET.

A new model for Ford cars has been announced by the makers of the moto-meter. It is fashioned especially to fit the needs of the Ford car and is to be placed on the market at \$2.75, complete, with a handsome nickel-plated radiator cap. The Moto-Meter Co., Long Island City, N. Y., has a model to fit every car and purse. The four models previously announced are the Standard at \$10, the Overland at \$10, the Junior at \$5, and the Midget at \$2.50. All models are sold with a full guarantee.

The moto-meter is the danger signal of motor trouble, is attached to the radiator cap and registers the temperature of the air and steam above the level of the water in the radiator. As almost every defect in a motor, such as a leaky piston, ring, warped valves or empty oil reservoir is immediately reflected in the temperature of the water, the moto-meter instantly registers "danger."

The new model, designed especially to guard Ford cars against sudden changes of temperature, not only saves wear and tear on the engine and prolongs the life of the car, but it adds materially to the attractiveness of the car.

NEW BRITAIN ALL-STEEL BENCH DRAWER.

The New Britain all-steel bench drawer is designed to meet the needs of shops whose requirements do not demand the wood back, bottom, and front of the "frictionless type." A hem of triple thickness around upper edge and the welding of all joints combine to produce a drawer of remarkable strength and durability. It is 18 inches wide, 16 inches front to back and 5 inches deep.

With the common type of bench now almost universally used, having a thinner back plank than front one, an open space is left between the back plank and the ordinary type of drawer which invites pilfering. In this drawer, however, a solid sheet metal top prohibits any tampering at the rear and prevents blocking or a lockout through wedging of contents. In addition it serves to exclude any oil or water that might by accident soak through from above. The slide ways are integral with the top and give to the drawer a smooth, free movement without binding or cramping tendency.

A cylinder lock of good grade with two individual keys is provided. Master keying, if desired, may be had at cost. The possession of master key by foreman will prevent the stowing of contraband in drawers. The drawer is sold as a unit, requires no fitting, and is easily and quickly installed without any cutting of bench. The drawer is made

by the New Britain Machine Co., New Britain, Conn.

NORWESCO NON-FREEZE SOLUTION.

By perfecting a non-freeze solution that the motorist can test with an ordinary battery hydrometer, the Northwestern Chemical Co., Marietta, Ohio, feels that it has supplied a need which has been long felt by every motorist who has ever driven a car in freezing weather.

Norwesco "Twelve-Twenty" is the name of this radically different liquid. The easy-to-test feature is the "big seller" back of it, but running close second in importance is the fact that "Twelve-Twenty" requires no mixing or dissolving—it comes ready to use right out of the can. The Norwesco Laboratories feel that every motorist who has ever put in a messy half-hour measuring and compounding a non-freeze mixture will appreciate this Twelve-Twenty feature at once.



Because it can so readily be tested, "Twelve-Twenty" does away with all guess work in connection with radiator protection, says the Norwesco Co. No longer need the motorist wonder whether his non-freeze is strong enough every time a cold snap comes. If he has followed the Norwesco suggestions to test his radiator solution at regular intervals, he knows that his radiator is absolutely safe down to 20 degrees below zero—the point at which the Norwesco solution freezes.

The solution is made with a specific gravity of 1220, hence its name. If evaporation or leakage cause changes in the solution the hydrometer discloses that fact and a weak solution may then be restored to standard strength by the addition of "Twelve-Twenty." If the test shows undue strength, dilution with water corrects the defects. Thus a motorist may test his non-freeze solution as he does his tires or his battery and the close check he can keep on the solution should go a long way toward reducing last winter's record of more than 100,000 frozen radiators.

There has been much complaint by motorists over the tendency of the commonly used anti-freezing solutions to "find" leaks. This fault is said to be totally lacking in "Twelve-Twenty." On the contrary, the tendency of Twelve-Twenty is to keep the cooling system fluid-tight. Its boiling point is 12 degrees higher than that of water, so it evaporates very slowly. In this way it overcomes one of the chief objections to alcohol mixtures. The claim is made, also, that it warms the motor more quickly than water, thus reducing the "popping" and enabling the engine to settle sooner into a smooth, easy motion. Norwesco Twelve-Twenty will be sold in three sized containers, one gallon cans, \$1.25, three gallon cans \$1.15 per gallon, and five gallon cans \$1 per gallon.

A powerful advertising campaign is expected to put Norwesco "Twelve-Twenty" into the "big seller" class along with Se-ment-ol, the radiator cement with a million users, Skalex, the radiator cleaner, and the other well-known products of the Norwesco "Chemically Correct" line.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....
.....
.....

Name

Address

**DEALERS—Here's a quick seller
with liberal profits for you.**

SPRAGUE WORM STEERING GEAR
for
Ford Cars

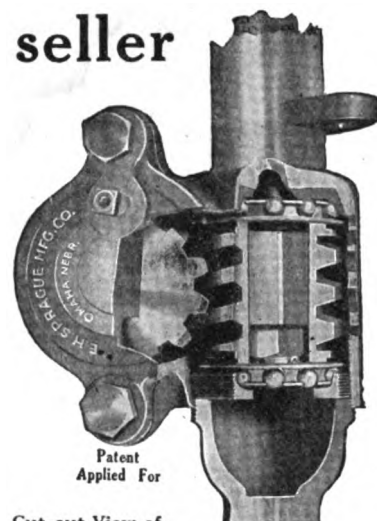
Every Ford owner knows that his car needs stronger steering equipment—something to get him out of ruts, prevent cramping or buckling when he hits a bad place, prevent locking over center and hold his Ford to the road.

You can sell the Sprague Worm Steering Gear under our guarantee of
MONEY REFUNDED IF NOT SATISFIED

DEALERS

The Sprague Worm Steering Gear retails at \$15. We allow you a liberal profit and you can make an additional charge for installing. You should easily sell this gear to 90 per cent of the Ford users in your community.

Write or wire us for our dealer proposition.



Cut-out View of
SPRAGUE WORM STEERING GEAR
for Ford Cars
Ball Bearing Floating Shaft

Victor, Iowa.
March 18, 1918.

E. H. Sprague Mfg. Co.,

Dear Sir:—Your letter of recent date is at hand in regard to the worm steering gear we got of you.

It is all you claim of it and the party that we put it on for would not take it off for three times its cost to him. We will sell many of them this season. They sure are the stuff for the Ford.

Yours truly,
Craft & Craft Garage.

Sold through jobbers and dealers—Made only by the

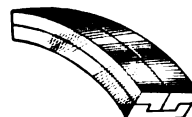
E. H. SPRAGUE MANUFACTURING CO., Dept. 8, Omaha, Nebraska



Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

Ever-Tyte Bill
Says:—

Us fellers have got the "rep" of being the next thing to a guy who makes his livin' with a piece of lead pipe, but just the same, there's a few of us takes a pride in turning out our "jobs" right and besides we've got the real dope on a few of the things that goes in and on "gas wagons"—Most guys don't know how important piston rings are, and how much trouble they can save themselves by takin' a few tips from us guys. Things are improvin' all the time and my tip is to try **EVER-TYTE PISTON RINGS** if you want more power—a sweet runnin' motor and want to cut down your oil and repair bills.



**RIGHT ANGLE
INTERLOCK**

The EVER TIGHT PISTON RING Co.
1609 KINGSLAND AVE. SAINT LOUIS

STORM PISTON VISE FOR HOLDING FORD PISTONS.

The Storm piston vise is designed for the repair shop where maximum efficiency is desired. It holds the piston firmly while fitting the rings, bushings, pin, connecting rod, etc., without loss of time and without injury to the various parts; it is especially valuable in tightening the connecting rod bolts.



A common practice has been to hold the connecting rod in an ordinary bench vise while performing this operation. This often resulting in bent or twisted connecting rods. This bend or twist passes unnoticed and when the motor is reassembled it causes the piston and bearings to bind and cut away rapidly, making the job short-lived and unsatisfactory.

The Storm vise is simple in design, taking up but little space, and can be permanently attached to either bench or motor stand. The jaws are amply strong and are lined with a soft metal which prevents marring and injury to the finished surface of pistons and rings.

An eccentric lever is used to insure quick action, and a wing nut also provides quick adjustment for oversizes. The jaws open automatically when the lever is released. A large opening in the center permits the connecting rod, when attached to the piston, to pass down through if desired.

HOBART BROTHERS SEND FOLDERS TO GARAGES AND SERVICE STATIONS.

Hobart Brothers have just issued a handsome folder on their 2-KW generator set for battery charging. It is well illustrated and describes a number of their products. Copies can be obtained by writing to Hobart Brothers, Troy, Ohio.

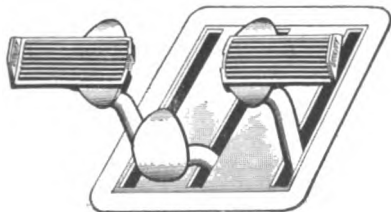
GRAPHITE LUBRICANTS PREVENT FRICTION.

Automobilists yearly pay a heavy toll to friction, which, if figured out in dollars and cents, would amount to millions. And this tax, say experts, can be reduced to a fraction of its present amount by proper attention to lubrication.

The Joseph Dixon Graphite Crucible Company has offered a series of graphite automobile lubricants which they claim solve the problem by providing a permanent film of graphite which effectually separates the two surfaces. The Dixon Company mines its own graphite and uses only a carefully selected flake variety.

UTILITY GRIP PEDALS NOW MADE FOR FORDS.

One of the latest products of the Hill Pump Valve Co. is a utility sure-grip pedal for Ford cars. The heavy rubber pad and the flange at the side prevent all possibility of the foot slipping off the pedals. They convert the small, smooth Ford brake and clutch pedals into standard size, non-slipping pedals and allow the feet to assume natural, comfortable positions. They



also serve to distinguish the brake and clutch pedals from the reverse.

In rainy weather a driver's shoes are often slippery when applied to the regulation smooth Ford pedals, resulting sometimes in accidents because the foot has slipped off a pedal. The use of Utility sure-grip pedals will lessen the chance of accident. Dealers' discounts and terms will be furnished by the Hill Pump Valve Co., Archer avenue, Canal and 23rd streets, Chicago.

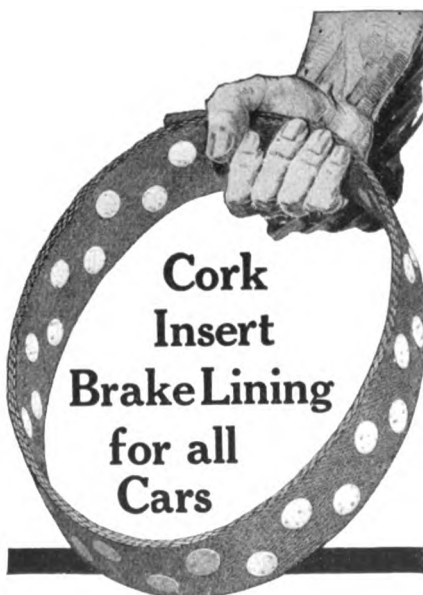
HARTELT BROTHERS ARE MINNESOTA DISTRIBUTORS OF FLECHTER CARBURETORS.

Hartelt Bros., Norwood, Minn., have been appointed Minnesota State distributors for Flechter carburetors and will operate a service station for several important counties in Minnesota.

CORK INSERT BRAKE LINING WITH GRIP.

The ability of cork to grip and give smooth friction has long been known. Its coefficient of friction is the highest of any known solid. It has been widely used for a good many years in pulleys, friction clutches and so on. Its latest application is to brake linings where its success perhaps is the greatest of all.

Cork and brake lining fabric make an ideal combination for the purpose. In cork insert brake lining, buttons of cork are set in a double row. The lining protects the cork and the cork wonderfully increases the braking efficiency of the lining. Very excellent results in braking efficiency are thus attained. Cork insert brake lining is claimed to be slip-proof, oil-proof and squeak-proof.



A taxicab company which has made extensive tests of this lining reports that it has made the braking much more positive and safe. As evidence of the oil-proof efficiency of the lining it is pointed out that while one man has been constantly employed in the past to burn oil out of the linings, he has lost his job so far as cork insert linings are concerned.

Cork insert lining does not become glazed in service, and the corks stay soft and resilient to the last mile of use. The result is that there is no squeak. Cork insert linings are made by the Advance Automobile Accessories Corporation, 56 E. Randolph St., Chicago, and sold by the same jobbers as handle their cork insert linings and fan belts for Fords.

AMONG THE MANUFACTURERS AND EXECUTIVES.

Frank Jepson has been appointed assistant sales manager of the Hurlburt Motor Truck Co., New York City. He was recently sales promotion manager for the New York branch of the Firestone tire concern.

O. C. Hardwell is now manager of the Overland Sales Co., Galesburg, Ill. He was formerly assistant advertising manager of the Chalmers Motor Co., Detroit.

H. B. Sweeney has become assistant advertising manager of the Paige-Detroit Motor Car Co., Detroit.

L. T. Miller, formerly with the Detroit Steel Products Co., has taken up the duties of purchasing agent for the Elgin Motor Car Corporation, Chicago. Mr. Miller has had ten years buying experience with such concerns as Hudson, Lozier, Continental and Paige.

Robert Sykes, formerly with the Times and later with the Citizen at Brooklyn, is now in charge of automobile advertising for Diuguid Brothers, Liberty distributors at Brooklyn, N. Y.

A. L. Tull has resigned as general sales manager of the Elgin Motor Car Corporation, Chicago.

Reports which gained currency through use of incorrect information by one of the prominent trade papers that Norris Mason, the veteran, has been appointed sales manager of the Fulton Motor Truck Company at Farmingdale, L. I., has been denied by the Fulton company, which states that Mr. Mason was appointed sales manager of the New York-Fulton Truck Company at 1800 Broadway, New York. Mr. Mason is one of the veterans of the automobile industry in New York, having been for many years prominent in the importing field, and in later years as a handler of American passenger cars. Wm. F. Melhuish, Jr., is president and director of sales, and Herb J. Flint is assistant sales manager of the Fulton Motor Truck Company of Farmingdale.

At a recent meeting of the board of directors of The Mason Tire & Rubber Company, D. N. Mason was elected vice-president in recognition of his work for the company since its organization.

W. L. Agnew, formerly advertising manager of the Hudson Motor Company, Detroit, and later with the Chalmers Company in the same capacity, is now connected with the Moore Motor Company, Liberty distributors at Columbia, S. C.

S. W. Croxton, Jr., is now manager of retail sales promotion for the Fulton Motor Truck Company, of Farmingdale, Long Island, N. Y. Mr. Croxton is a veteran in the automobile field.

C. C. Winningham has resigned as advertising manager of the Hudson Motor Car Co., Detroit.

The F. J. Linz Motor Company, San Francisco, is now the distributor of the Liberty six in the Northern California automobile field. Fred J. Linz, head of the company, just recently concluded arrangements for distribution of this car with J. E. Fields, director of sales of the Liberty company. It is to be handled in conjunction with the National line, which Mr. Linz has most successfully represented in San Francisco for several seasons past.

Use Solder or Babbitt which has a TIN-CONTENT as low as is consistent with good work. By conserving the supply of tin you will do your part to help win the war. There is no tin mined in the United States. We are dependent for our supply from overseas. Without tin there will be no tin plate to make cans for canned foods; no Solder to solder the cans; no Babbitt, which is necessary for bearings in the engines of our locomotives, ships and aeroplanes.

We are co-operating with the War Industries Board on the conservation of tin, which movement has the enthusiastic support of all manufacturers of Solder and Babbitt.

TIN

will help win
the war!



This space contributed for the Winning of the War by
CHICAGO SOLDER CO. CHICAGO U.S.A.

Milwaukee Curb Pumps Power Or Hand Operated



Master Electric

From among the wide range of outfits which the Milwaukee line offers you, you can surely find one to exactly fit your needs.

Milwaukee gasoline curb pumps have earned an enviable reputation as business-getters. Speedy service and absolutely accurate measurement are the features that determine whether the motorists will patronize you or a competitor; speed and accuracy are the features which stand foremost in Milwaukee Outfits.

If you have an old, obsolete outfit, it will pay you to install a fine, trade-attracting Milwaukee Pump.

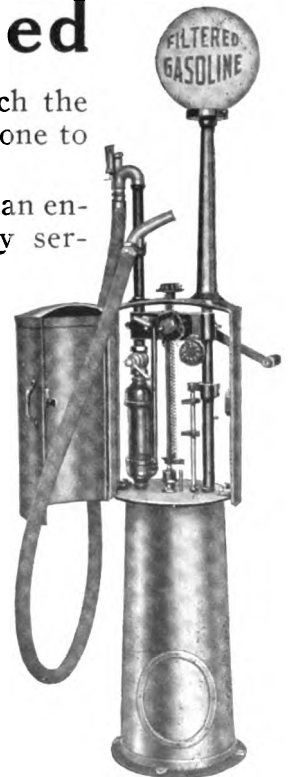
Write today for catalog and interesting literature.

Milwaukee Tank Works

Milwaukee, Wisconsin

Manufacturers of 30 types of gasoline and oil pumps and storage outfits.

Prompt shipments from warehouses in New York, New Orleans, Milwaukee and San Francisco.



Type 37

What Does Your Banker Think

Of You As a Business Man?

(Continued from page 12.)

Chicago had a crisis a few years ago which drove the president of the company into ill health and death.

One of the principal debtors suddenly failed and \$300,000 seemed so definitely tied up by it that the banks called their loans to the company for \$275,000.

The company at that time had assets of over \$2,000,000 but that did not satisfy the bankers for they had to have their money.

Fortunately a wealthy man was found who agreed to pay off the banks, which were satisfied to continue the loan with his guarantee.

Strangely, enough, the company which failed, suddenly reorganized, paid the \$300,000 a few months later, and since that time the man who provided the ready money has made a few millions.

Not many business men have rich friends or acquaintances and as a rule most every business requires capital beyond the means of the individual to furnish.

The logical place to go for that money is the bank.

Bank Has Neighbor's Money.

Curiously enough, a bank is an institution which has on deposit the money of your neighbor which is unused in his business or saved by himself and his family.

A bank is a much misunderstood place, and more people are offended in banks than in any other place.

Bankers are called unsympathetic, cold blooded and merciless at times but the one who makes the complaint usually forgets that the banker is only the custodian of the neighborhood money, subject to the most minute inspection of a State or National bank examiner, and the least suspicion of poor judgment is severely criticized or ordered corrected. This is the banker's side of the case.

It is upon assets that the bank must depend for security. Assets are quick and slow—accounts receivable and merchandise belonging to the first class; while buildings, real estate, machinery and fixtures belong to the other class.

Where quick assets are in a healthy condition, where there are signs of a good active collection department, it makes conditions of borrowing good.

While a great large uncollected receivable account may give some business men comfort, it is open to the criticism that someone in the business is too optimistic or is careless.

After all that is said and done the business of collecting the bills due is the important branch of the business, especially at this time when salesmen are not so necessary, and the old necessity of promises not written into the order is done away with.

As the banks deposits are on demand it does not require any thought to realize that commercial banks cannot consider buildings, machinery, real estate and other fixtures any other than necessary backgrounds for the quick assets.

The value of machinery or real estate has an entirely different outlook when being sold under the sheriff's hammer.

Machinery today is costly and even impossible to buy under a year's time, but the man who has to sell his plant after a period of misfortune knows that conditions are sadly reversed, for he can hardly give them away in the same amount of time.

It must be borne in mind, however, that a beautiful building, well equipped, with valuable ground underneath, has the value of giving the banker an idea of the stability of the business.

A nice, clean, well-kept business, well located and giving good service would stand a much better credit chance than one with physical looks against it.

Character Basis of Credit.

And by all means the character of the man in business is really the basis of it all—in fact, J. P. Morgan said that character was the real basis of credit.

Then comes a financial statement of the business. Even old and well tried concerns furnish these to the bank.

In fact, this is the only way that the banker can re-discount your paper in times of necessity at the Federal Reserve bank.

There is always a study made of your future prospects, and the effect of general business conditions upon your basis.

One must beware of too much optimism and enthusiasm, as that is always taken into consideration, although men would not go in business unless they had a reasonable amount of hope.

Every man should be glad to look upon his banker as his real credit man, as well as advisor.

No man can go it alone and there are times when every man feels better when he can discuss his worries with others.

When the bank was organized, one of the things its founders started out to do was to make a business man's confessional—a sort of a clearing house for all the business problems of the neighborhood.

One can be pretty sure that when he is turned down, it is not for personal reasons but for the general good of the community.

No more important business exists in the average community than the garage owner and automobile dealer.

And no reason exists why such a business should not have the highest character, as well as financial stability.

What is more necessary to a community than cars, trucks and tractors, which have given the world such an added efficiency.

No industry has a better case to present to a banker than the one which has done so much to make agricultural life pleasant as well as productive.

There are few things which have so thoroughly combined utility and happiness. Surely no banker can deny this.

Go to him with your problems.

"There's a Garage!"

To say that a garage needs an electric sign is like saying "Food will win the war". Everyone admits it. What we want to impress is — you need a

FEDERAL ELECTRIC SIGN

With most all garages using some kind of a sign, the man with the brightest and most attractive sign (by day as well as by night) is the man who gets the preference.

A Federal Sign will make your garage the most attractive to strangers as well as to home folks. The porcelain enameled steel of Federal Electric Signs cannot fade, rot, or rust. It never needs painting. An occasional washing keeps it looking like new.

Government Officials have approved the use of electric signs within the regulations of the fuel administration. The Federal embossed 16 inch letter sign costs only 5 cents per hour for electricity. Let us submit a sketch of a Federal Sign to fit your particular need.



You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

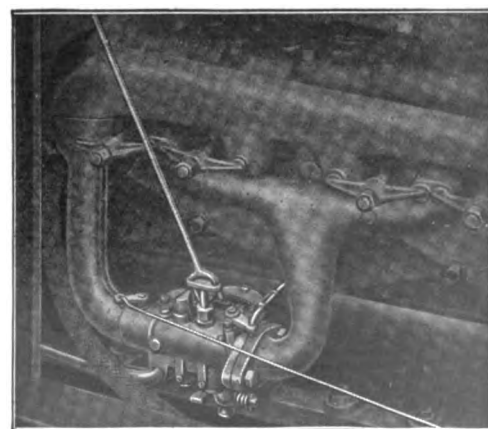
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



Return Loads Bureaus Needed In Cities All Over the Country

System Puts Shippers in Touch With Owners of Motor Trucks That Otherwise Would Run Empty

There is great need of immediate creation of return-load bureaus in cities all over the country to put shippers in need of transportation in touch with owners of motor trucks who are operating them in many cases with loads only one way.

The National Automobile Chamber of Commerce has received many inquiries from truck operators asking where return load shipments could be obtained. One such call was from a company that was sending a truck from New York City to Vermont empty to bring back a load of machinery. Another was by a company that had bought a truck chassis in Cincinnati which was to be delivered overland and the purchaser wanted to get in touch with a passenger car manufacturer in the Ohio city who had a car to be delivered in New York. Several calls were from Philadelphia and Trenton by truck operators who were sending loaded trucks to New York and desired to obtain loads to take back.

On the other hand, the Chamber has received a number of calls from merchants

inquiring for the name and address of companies operating motor trucks between New York and Philadelphia.

These inquiries show the need of bureaus all over the land to bring the two interests together, thereby solving some of the transportation difficulties due to railroad freight congestion and making possible a reduction in the cost of haulage by highways.

System in Operation.

A system of return-load bureaus has been established in all the larger cities in Connecticut by the State Council of Defense and is in successful operation. The Motor Truck Club of New Jersey has established such a bureau in Newark and one has been started in New Brunswick, N. J.

The Highways Transport Committee of the Council of National Defense, Munsey Building, Washington, which inaugurated the movement, to relieve freight congestion, is interested in getting similar bureaus established and is sending men to present details regarding the plan to chambers of commerce or other interested or-

ganizations in the different cities. The Merchants' Association of New York has been asked to undertake the work for that city.

All that is required is to put one employe in charge of a card index system and telephone service, to list truck operators who give notice that they desire return loads and shippers who advise that they have loads to be delivered in various cities. The "Return Loads Bureau" is then listed in the telephone directory and truck owners and shippers of the city are notified by circular and through publicity in the daily press of the establishment of the bureau. The bureau incurs no responsibility, its only function being to put shipper and truck owner in touch with each other and leaving the matter of rates and liability to be agreed upon by them.

Full details regarding how to establish such a bureau, with illustrations of card index and other forms used by the Connecticut State Council of Defense, have been published in a small pamphlet by the Highways Transport Committee. Copies will be supplied to anyone interested upon receipt of request addressed as above.

"The day of 'shirt-sleeve experience' is rapidly passing away in the field of business, as it has already passed away in the fields of law, medicine and engineering."—Chas. W. Eliot.

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air**.

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.

MIDLOTHIAN TEXAS.





Suggest MUELLER LOCKS to your FORD customers!

You can recommend them with confidence because they **have done** what other locks claim to do—made the Ford safe.

Police records show the "MUELLER" to be the only theft proof lock on the market. They are approved by the Underwriters Laboratories and Insurance Companies allow at least 15% reduction in rates when "Mueller" locks are used.

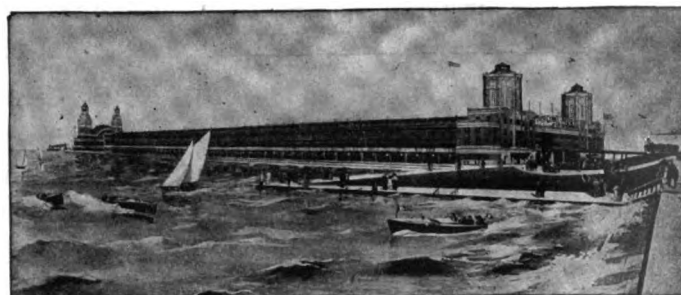
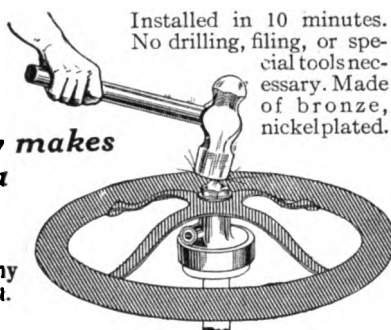
THEY'LL STAND THE HAMMER TEST!

No thief can get away with a Ford by this method when it is equipped with a "MUELLER."

This accessory makes money for you

Write today for full information.

The Reliance Company
411-417 So. Sangamon St.
CHICAGO, ILL.



Chicago's Municipal Pier Scene of NATIONAL TRUCK TRACTOR ACCESSORIES EXPOSITION

SEPTEMBER 14th to 21st

Trucks. This will be America's most representative war-time truck show, embracing the giants of transcontinental fame and the little local delivery hustlers. Trucks are in the limelight because of their great service at the front and at home—and all the best trucks will be shown at the Municipal Pier.

Tractors. Greatest ally of the Allies; all the giants of the farm and battlefield on display. Small tractors, large tractors; America's representative tractor manufacturers will participate in this great exposition—a stimulant to the broader agriculture necessary to meet war-time needs.

Accessories. A big part in war-time conservation is being played by automotive accessories which increase efficiency—mileage and service—and decrease cost of upkeep and operation. The accessories shown at the pier will bring home to everyone the tremendous strides which American manufacturers have made toward helping to win the war.

For details write

AUTOMOTIVE & ACCESSORIES EXPOSITION, INC.

Care Hotel New Southern

13th and Michigan Ave., CHICAGO

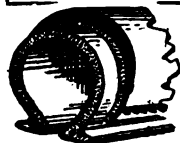
GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel will put them back on the job.**

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the McDaniel plant they

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings & Tubes	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

WILLARD SUPER HEATER

A great
saving
for the car
owner.
Big Profits
for You

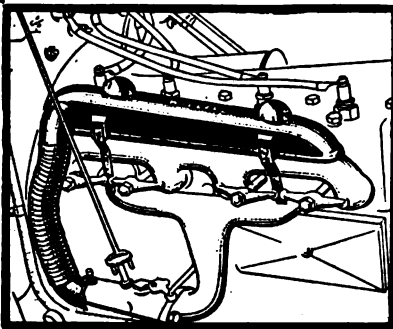
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD

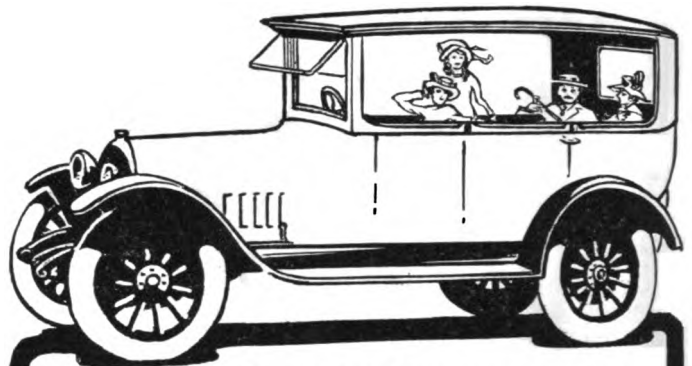


Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



YOUR CUSTOMERS will want this pump!

You have heard the old maxim, "The proof of the pudding is in the eating."

The Jensen Auto Tire Pump has maintained a standard for the past four years and is **proof** and has **proven** its wonderful merits time and time again.

JENSEN TIRE PUMP

Ninety pounds pressure with one-fourth the effort of the ordinary hand pump.

Sounds mighty good—don't it?

W.H.HOWELL CO.
Geneva, Ill. U.S.A.



Purchase one and get the **proof**.

Write for jobbers' and dealers' discounts.

Pondelick Brothers

will
pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for **\$15.00**.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO
ILLINOIS

Fill Up Our Soldiers' Pipes

America's fighting men need tobacco to make trench life a little more comfortable. Here's a chance to treat the boys at the front.

"Our Boys In France Tobacco Fund" has been organized to furnish "smokes" for the American soldiers and sailors in active service.

All labor and administrative expenses are contributed so that every cent you give goes to pay for tobacco, which is purchased in large quantities at a low price.

One dollar buys four packages of tobacco and sends them to France. Each package, costing twenty-five cents, has a retail value of forty-five cents and keeps a man in "smokes" for a week. Every dollar sent to "Our Boys In France Tobacco Fund" buys a bundle of tobacco that would cost \$1.80 at your cigar store.

In every package is a post card addressed to a contributor to the tobacco fund. In accepting the package, the soldier or sailor agrees to send on the card a message to his benefactor in the United States. According to the plan, every person who gives a quarter gets his receipt from a fighting man in France.

The work of this fund is approved by the Secretary of War and the Secretary of the Navy.

Send as many dollars as you can spare. Write your name and address clearly.

"Our Boys In France Tobacco Fund"

25 West 44th Street, New York City

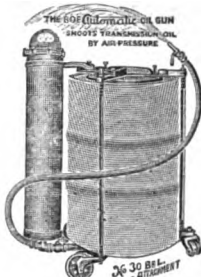
Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

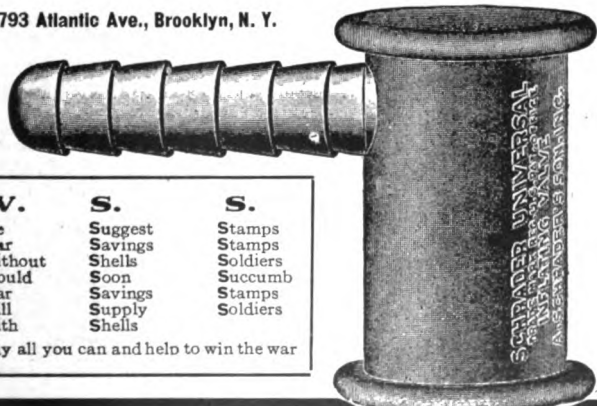
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{3}{4}$ inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

You never can tell when the BUFFUM PATENT BUICK VALVE REMOVER will come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the **only** device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.

Every Garage and Repair Shop

should have a BUFFUM BUICK VALVE REMOVER as part of its regular equipment.

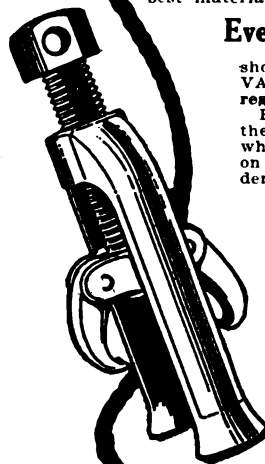
Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00 Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.



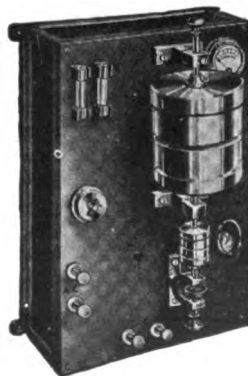
The Breco Converter FOR

charging batteries or for any other purpose where it is necessary to change A. C. to D. C. is Far Superior.

**HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE**

The new, modern method tested by years of everyday service. Endorsed by highest authorities.

Price, \$24.00 Up---Sizes, 1 Battery Up



Battery charging becomes a very simple, inexpensive and mighty profitable matter with the BRECOCHARGER.

Write for Catalog No. 22

THE BRECO ELECTRIC CO.

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees



Eventually you will use



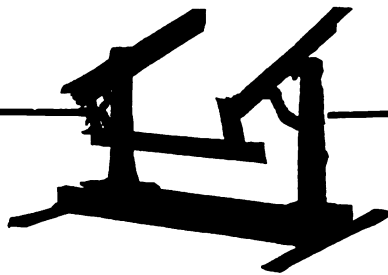
NOKORODE

on every soldering job done
in your garage.

This soldering paste has been used extensively by the manufacturers of America's leading cars, including the Ford, Dodge, Buick, Studebaker, Cadillac and Locomobile. It has filled their most exacting requirements, and will likewise make good for you.

Write today for sample.

M. W. DUNTON COMPANY
PROVIDENCE RHODE ISLAND, U. S. A.



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crare—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

Monogram Users are
Quality Choosers.

**NEW YORK LUBRICATING
OIL CO.**

NEW YORK CITY
and CHICAGO

Branches in Principal Cities

VULCAN AUTOMOBILE SPRINGS

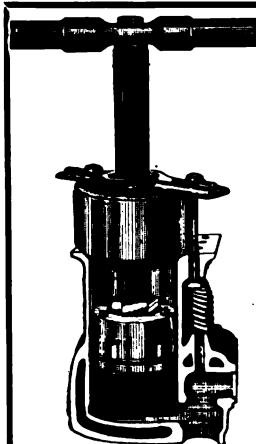
Immediate shipment VULCAN seven leaf, heavy, oil tempered, fronts for the Ford. 588 other types, 90,000 springs in stock. Liberal discounts.

JENKINS VULCAN SPRING CO.

Factory and General Offices, Richmond, Indiana.

Branches with full stocks

St. Louis, Missouri	1402 Chestnut Street
Minneapolis, Minn.	1024 Hennepin Avenue
Dallas, Texas	209 South Houston Street
Reading, Pa.	538 Franklin Street
Sumter, S. C.	29 Caldwell Street



MAKE MORE PROFIT
BY USING

STORM Reboring Machine

The most practical machine for any type of motor. SIMPLE, SPEEDY, ACCURATE and RELIABLE for hand or power. No shop complete without one. In daily use in all parts of U. S. A. and foreign countries.

Shortage of new cars makes it indispensable in large and small shops.

We furnish machines of varied capacities from 2" up. Also Special Ford Machine. For sale by leading jobbers. Oversize pistons for all makes of motors.

For further information, write

STORM MFG. CO., Thompson, Iowa

Tire Insurance

THERE is not one serious argument to be advanced in favor of not buying a tire-pressure gauge.

Every man, woman or child who runs an automobile not only should have one but **MUST** have one if he, she or it cares anything about the mileage to be gotten out of tires.

When you buy a gauge, you pay for the gauge and save on the tires.

When you don't buy a gauge, you pay for the tires and save on the gauge.

Which would you rather do?

TWITCHELL AIR GAUGE

**BUY
A**

PRICE \$1.25

and save your tires

The Twitchell Gauge Co.
1518 So. Wabash Avenue, CHICAGO

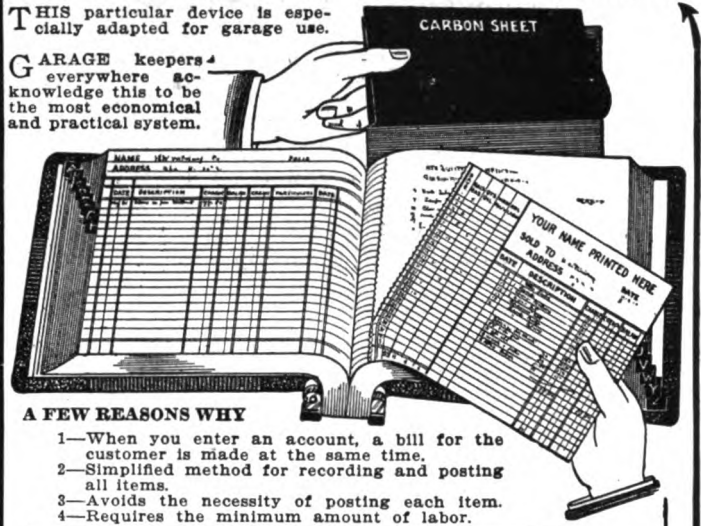


SAVE TIME AND MONEY

**Our SPECIAL GARAGE Bookkeeping Plan
Gives You the HIGHEST Possible EFFICIENCY**

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Horton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS
THOMAS J. HARTON & CO., Inc., 212x Church St.
 NEW YORK
Loose Leaf Specialties

AMPECO PRODUCTS

**Sell readily because their superiority
is well known to the Motoring Public**

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece. If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

**American
Machine
Products
Co.**

**Marshall-
town,
Iowa**



Big Profits in H-B Battery Charging

The demand for recharging auto storage batteries is growing larger every day. The curtailment in automobile manufacture means more last year's cars in use, more batteries to be recharged, and bigger business and bigger profits for the up-to-the-minute garage.

This H-B 500 watt battery charger will recharge any make or size battery, handling 1 to 7 batteries at a time. Operated from city current or engine, without any electrical or mechanical experience. Current costs only 12c to 15c per battery. Autoists pay 75c to \$1.50. You make 60c to \$1.35 on every battery you charge. Hundreds of H-B owners are clearing \$40 to \$60 extra profit every month. So can you.

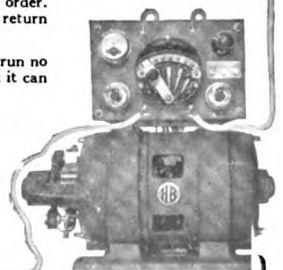
\$15 Starts You in This Money-Making Business

Cash payment of \$15 puts charger in your garage. Balance in 9 monthly payments of \$20 each, which earnings should easily more than pay. Tear out this ad and send it with your name for full particulars or send first payment of \$15 with trial order. Under absolute money-back guarantee, you can return machine if it is not satisfactory in every way.

Don't wait. Send trial order at once. You run no risk and machine itself will convince you that it can easily make big profits for you.

WRITE OR WIRE TODAY

Hobart Brothers Company
 Box G7 Troy, Ohio



GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company

1002 Washington Boulevard
Chicago, Illinois



Smooth as the flight of the birds



going North for the Summer is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.

Hoopestown, Ill.



The *Geyser* VISIBLE GASOLINE DISPENSER is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage. Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.

Barrel Pumps

Measuring and Non-Measuring.
For Automobile Oils.

Visible measuring glass dome.
Can be attached to gasoline pump you now have.

Your customers want to see the amount they are getting.

Write today for literature.

Groetken Pump Company

Aurora, Illinois



BUILD UP BIG BUSINESS-MAKE BIG MONEY

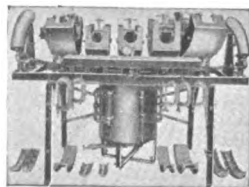
OPEN A TIRE REPAIRING SHOP. MEN STARTING WITHOUT EXPERIENCE—NOW MAKING BIG MONEY. WE INSTRUCT YOU FREE. OUTFIT PAYS FOR ITSELF. WE HAVE 1,000 MORE VACANCIES TO FILL. GOLDEN OPPORTUNITY. But be sure—get the RIGHT Outfit. There is but one that operates upon CORRECT principle—the

VANDERPOOL VULCANIZER

Only Vulcanizer recommended by leading tire factories because the only one that repairs tires EXACTLY AS THEY WERE MADE.

VANDERPOOL CO.
SPRINGFIELD, OHIO

In answering address Dept. B.



SIMPLICITY
Demountable Wheels Enable That Quick Change
DEALERS—Every Ford owner is interested. Write today for literature and trade proposition.
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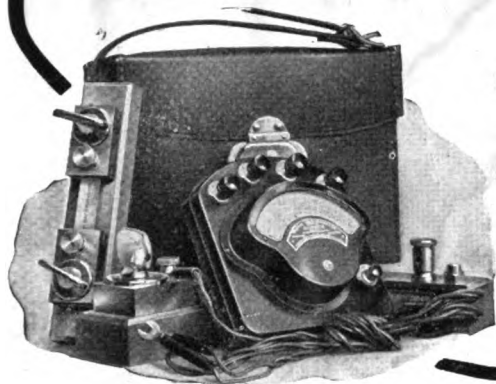
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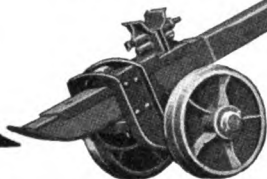
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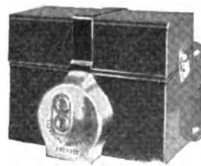
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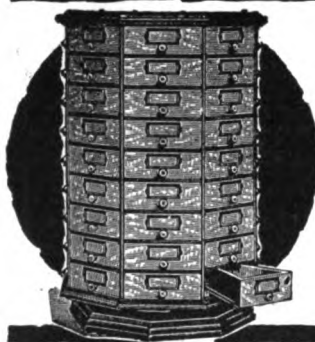
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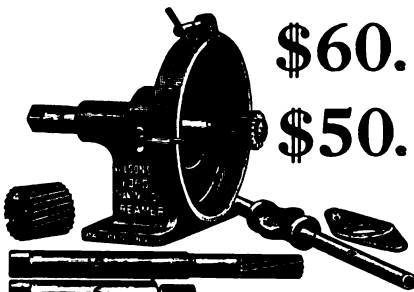
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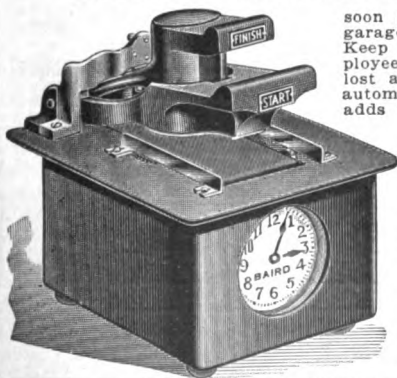
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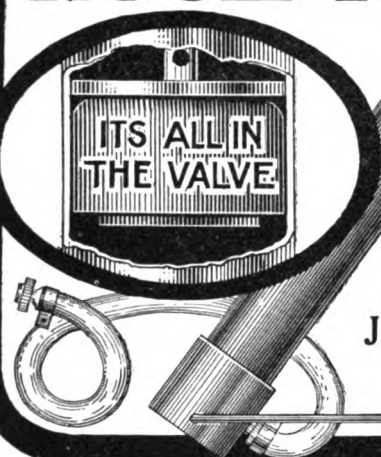
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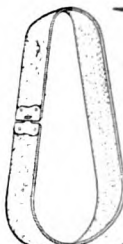
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WELDING APPARATUS

Bermo Supply Co., Omaha, Neb.
St. Paul Welding & Mfg. Co., 173 W. 3rd St., St. Paul, Minn.
Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		K	
Adams & Eiting.....	—	Kennedy Car Liner & Bag Co. 59	
Advance Automobile Accessor-		Keys Piston Ring Co..... 56	
ries Corp..... 62		Kimball Tire & Rubber Co....	—
American Accessories Co.....	59		
American Bolt & Screw Case		L	
Co..... 57		Lawrence & Co., L..... 58	
American Floor Surfacing Ma-		Lawson Co., The F. H.....	—
chine Co..... 57		Lourie Mfg. Co..... 56	
American Machine Products Co. 51			
American Oil Pump & Tank		M	
Co., The..... 6		McDaniel Rubber Co., Leo..... 49	
American Technical Society...	—	Marvel Carburetor Co..... 47	
Aske Automatic Voltage Regu-		Marvel Machinery Co.....	—
lator Co.....	—	Miami Trailer Co..... 8	
Atlas Auto Supply Co.....		Milwaukee Tank Works..... 45	
.....Inside Back Cover		Motor Accessories Corp..... 4	
Auto Cape Top Co..... 58		Mueller & Co., R. S.....	—
Auto Engine Works..... 58			
Auto Salvage Co..... 58		N	
Auto Spring Repair Co..... 56		National Cash Register Co.... 39	
Auto Wrecking Co..... 58		National Rubber Filler Co.... 48	
Automobile Accessories Co.... 59		National Wire Wheel Works... 6	
Automotive and Accessories		New York Lubricating Oil Co.. 52	
Exposition..... 49		Norma Company of America, 9	
		The.....	
B		O	
Baird Equipment Co..... 57		Olympian-Motors Co. 56	
Bearings Service Co..... 56			
Bermo Co., A. J..... 56		P	
B. & M. Mfg. Co..... 61		Panvar Co. 55	
Boe Co., H. M..... 51		Pondelick Bros. 50	
Broco Electric Co..... 51		Pruyn Ball Bearing Works... 57	
Brunner Mfg. Co..... 10			
Buettner Co., Chas. H..... 59		R	
Butler Mfg. Co..... 58		Reliance Co. 49	
Bufum Tool Co..... 51		Romort Mfg. Co..... 41	
		Ross-Gould.....	—
C		S	
Cassidy Co., Edward A.....		St. Paul Welding & Mfg. Co.. 58	
.....Inside Front Cover		Sealife & Sons Co., Wm. B.... 55	
Catelain, Andre G..... 58		Shaler Co., C. A.....Front Cover	
Chicago Baling Press Co..... 57		Schrader's Son, Inc., A..... 51	
Chicago Solder Co..... 47		Security Auto Lock Co.....	—
Commonwealth Edison Co.... 45		Simplicity Wheel Co..... 54	
Curtis Pneumatic Machinery		Sprague Mfg. Co., E. H..... 43	
Co..... 35		Standard Electric Lamp Wks. —	
		Standard Oil Co. of Indiana... —	
D		States Chemical Co.....	—
Dearborn Truck Co.	—	Sterling Engine Co.....	—
Defender Auto Lock Co..... 58		Storm Mfg. Co..... 52	
Detroit Auto Radiator Co..... 55		Sunderland Machinery & Sup-	
Detroit Weatherproof Body		ply Co. 58	
Co..... 57			
Dunton Co., M. W..... 52		T	
		Twitcheil Gauge Co..... 53	
E		U	
Elgin Motor Car Corp..... 56		United Engine & Mfg. Co..... 52	
Ever Tight Piston Ring Co.... 43		Universal Battery Co..... 56	
		Universal Industrial Corp..... 56	
F		Universal Tool Co.....	—
Federal Sign System (Electric) 47			
Firestone Sales Co..... 5		V	
Flexlume Sign Co....Back Cover		Vacuum Muffler Co.....	—
Forbes, J. P..... 59		Vanderpool Vulcanizing Co.... 54	
		Visible Gasoline Dispenser Co. 54	
G		W	
Ganschow Co., William..... 54		Wagner Specialty Co..... 59	
Garden City Spring Works.... 59		Warshawsky & Co..... 58	
Gill Mfg. Co..... 41		Webber & Co., P. H..... 54	
Globe Mfg. Co..... 7		Western Electric Co..... 3	
Graham Roller Bearing Co.,		Weston Electrical Instrument	
The..... 56		Co..... 55	
Greb Co., The..... 57		Wiggins, J. B., Co.....	—
Greer College of Motoring.... 58		Willard Co., The..... 50	
Groetken Pump Co..... 54		Williams Fdry. & Machine Co. —	
		Wilson, K. R..... 57	
H		Z	
Haney & Co., J. H..... 59		Zinke Co. 41	
Harton & Co., Inc., Thos. J... 53			
Harvey Spring & Forging Co. 37			
Haywood Tire & Equipment Co. 35			
Hobart Bros..... 53			
Holmes & Bros., Inc., Robert.. 55			
Howell Co., The W. H..... 50			
I			
Imperial Brass Mfg. Co.....	—		
Inland Machine Works..... 56			
Iowa Novelty & Brass Wks... 58			
J			
Jenkins Vulcan Spring Co.... 52			
Johnson Gas Appliance Co....	—		

REX Automobile Jack for Garage and Private Service

Engineered to Perfection

High Powered, Quick in Action and made to last regardless of Hard Usage.

Because

Constructed entirely from high grade Heat Treated Steel and Malleable.

It rolls on four good strong wheels and a mere boy can lift any car.

Because

As you start to lift the REX rolls under instead of remaining stationary.

Two in One

See the nose which is put there to hook under the axel and Rex Jack it up when the wheel is off.

Safe

No Springs, No Cogs, No Ratchets, but Automatically locks at any height, thus Insuring Safety at all heights.

Glides under the lowest part of any car even though they be equipped with Bumpers or Extra Tires, and raises to a height of 20½ inches without blocking.

Friends

Thousands in use and not a single complaint but Hundreds of Compliments. As a Time Saver it has no equal and will pay for itself any busy week. Ask any user.

Stocked by your Accessory Jobber.

Weight 47 lbs. List Price \$20.00.

**SOME DAY YOU WILL BUY
THIS TIME SAVER**



REX JACK RAISED

B. & M. Manufacturing Co.
5810-14 So. Wood St. CHICAGO, ILL.

CORK INSERT

For FORD cars and for BIG cars
for trucks
and passenger cars

WE want to make clear the fact that Cork Insert Linings are made **for every car that runs.**

For Ford cars there's the Cork Insert Transmission Lining. Sold in boxes containing set of three, all ready for installing.

Then there's Cork Insert Brake Lining for all the other cars, sold by the foot from the roll. Made in two thicknesses and thirteen widths.

At the left is pictured a piece of Cork Insert Transmission Lining for Fords. Below it is shown the package.

At the right is pictured a piece of Cork Insert Brake Lining used for cars other than Fords, while below is represented a roll of the lining.

Stops grab, slip, chatter, in Ford transmission

Oil, slip, grease proof—insures a safe brake

Cork Insert Transmission Lining for Fords stops the grabbing and slipping—vibration and chattering. Requires less pressure on the pedal. Makes the Ford Brake BRAKE. Saves the Ford rear end. Outwears several sets of ordinary linings.

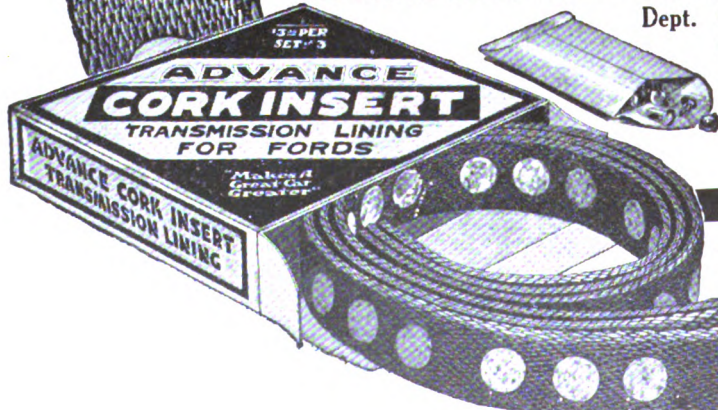
CORK INSERT BRAKE LINING has the highest co-efficient of friction obtainable in a brake lining. It produces smoother, more positive braking action. Less pressure is needed on the pedal. It is unaffected by oil or grease. No grab, slip, SQUEAK. Gives longer wear and better control of brakes.

DEALERS: The Cork Insert line is a wonderful money maker for the trade. It supplies a staple need with products that serve the user better and mean more profitable business for the dealer.

Any jobber will supply you with Cork Insert. Ask the next jobber's salesman who comes in about it.

ADVANCE AUTOMOBILE ACCESSORIES CORPORATION

Dept. G7, 56 E. Randolph Street
Chicago, Ill.



ADVANCE CORK INSERT BRAKE LINING

Another big seller is Cork Insert Fan Belts for Fords—they stop all slipping—keep the Ford fan fanning and the engine cool.

A NATIONAL DEMAND

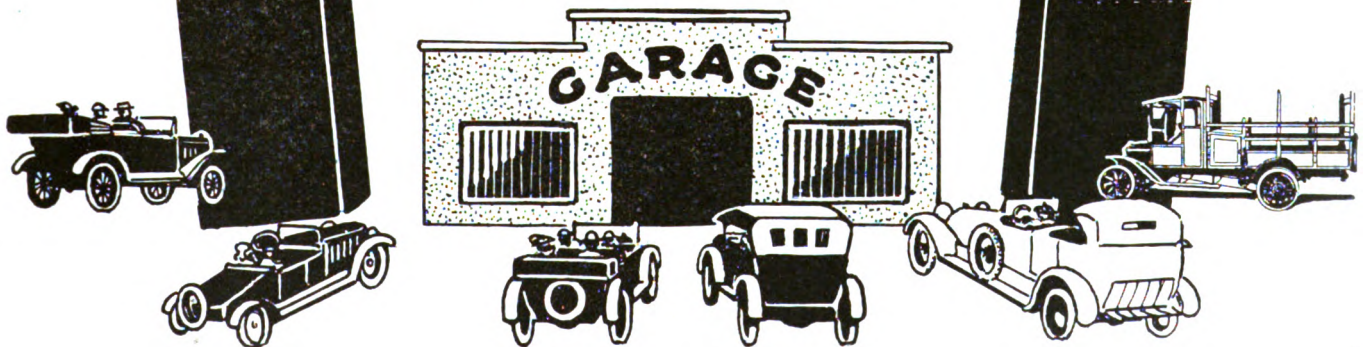


TIRE-DOH

is the magnet that draws trade

This is a year of thrift! People are saving money.

TIRE-DOH is a thrift accessory—your customers will want it—will ask for it—because it is a tire economy.



Our business-getting service helps will bring trade to you. TIRE-DOH is the standard tire repair outfit for repairing tires, inner tubes and all rubber goods. Most economical—easy to use.

Place your order with your jobber. \$.50 size—\$1.00 size.
Send for TIRE-DOH sales helps.

ATLAS AUTO SUPPLY CO.
680 W. Austin Avenue, CHICAGO, ILL.

THE STANDARD TIRE REPAIR OUTFIT
it s-t-r-e-t-c-h-e-s with the rubber.



This Sign Costs Just a Few Cents a Day

Just a few cents a day—a fraction of a cent for every thousand people who will see it—that is all it costs to keep a Flexlume Oplex sign above your door with all its cheerful, good-will-compelling brilliance.

Where can the automobile sales agency or the garage find advertising like that at ten times the cost?

Where at any price can you find a substitute for your name blazing up there in clear cut Oplex characters of raised white glass on a dark background, each letter an unbroken blaze of light. Strong, attention-pulling display when the lights are on, almost as forceful a sign in the daytime—raised white letters on a dark background.

The question is not, can you afford to buy an Oplex sign? It's can you afford to lose the business a Flexlume Oplex sign will bring you?

Flexlume Oplex signs are made in all sizes and designs. They are not costly. Just let us know something of your sign needs and we will show you what we have to offer.

THE FLEXLUME SIGN CO.

Potomac Avenue and Niagara Street, BUFFALO, N. Y.

Canadian Distributors: The Flexlume Sign Co., St. Catharines, Ont.

Pacific Coast Distributors: Electrical Products Corporation,
941 West 16th Street, Los Angeles, Calif.



AMERICAN GARAGE & AUTO DEALER

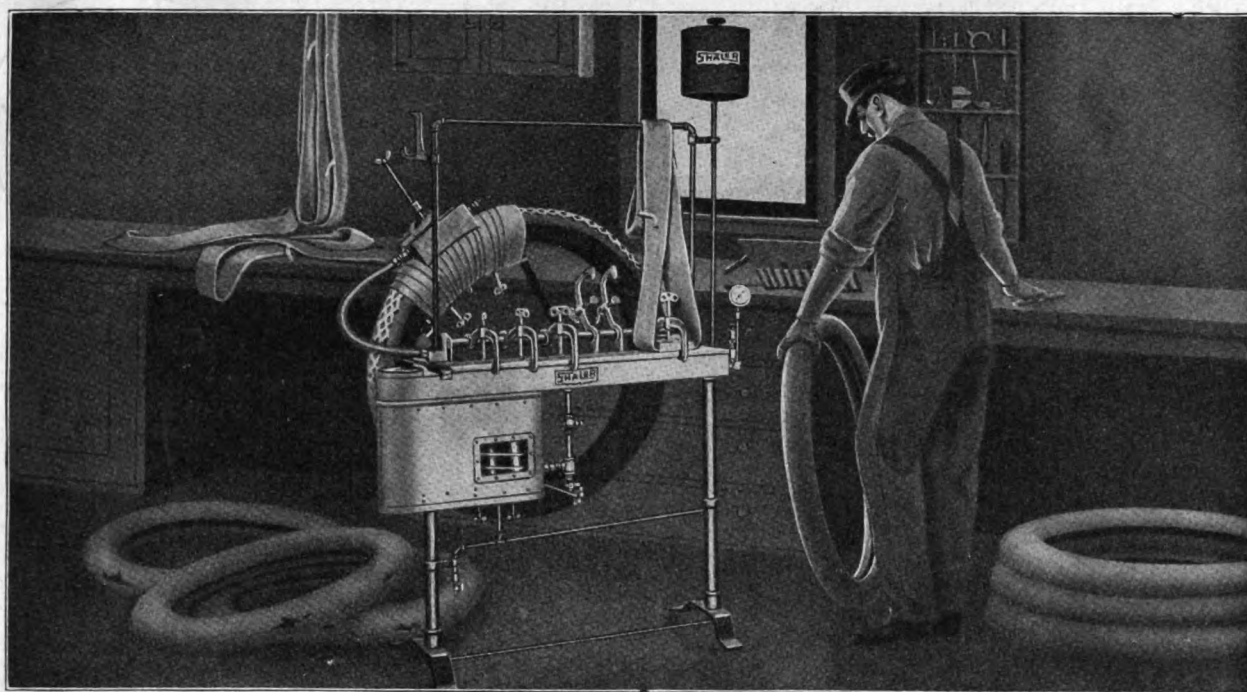


Published Monthly
116 So. Michigan Ave.
CHICAGO, ILL.

AUGUST

1918

Vol. 9—No. 8
10 Cents the Copy
\$1.00 Per Year



Tire Repairing Pays Big Profits

Today more than ever motorists must have their old tires mended and use them in place of new ones. Thousands of garagemen have taken advantage of this big opportunity and have installed tire vulcanizers—many of them are paying all their overhead expenses, rent, light, salaries, etc., with their profits from tire repairing.

SHALER Shop Vulcanizer
STEAM HEAT—Price \$70. (Subject to Trade Discount)

Mends 12 Casings and 200 Tubes a Day

This Shaler Vulcanizer is absolutely high grade. Will mend both tubes and casings—any size or style. Its large capacity—200 tubes and 12 casings a day—makes it a big money-maker for any garage or repair shop. Anyone can operate it—it has automatic heat control that insures perfect jobs. Uses the new Shaler Wrapped-Tread method of repairing casings. Equipped for either gas, gasoline or electricity—to suit your shop.

Sold by All Jobbers—Write for Catalog

Write your jobber for full information, prices, etc., or send to us for catalog and complete description of the Shaler line of Vulcanizers for motorists, garages and tire repair shops—sent FREE on request.

C. A. Shaler Company, 358 Fourth St., Waupun, Wis., U. S. A.



Locate your little power leaks

Do you really know what your motor is doing? Can you tell the minute a cylinder is laying down on the job? Or do you wait until it is skipping badly?

The G-P Muffler Cut-Out shows up clearly just what your engine is doing. It enables you to save power, and power is costly. It helps to keep your engine running sweetly, and adds a new pleasure to driving. It shows up the little losses that take the edge off power.

Note that it is made simple and strong. The G-P Muffler Cut-

Out opens at an angle that permits the freest escape of gas. There is no back-pressure.

Carbon will not accumulate. Made in two parts to be readily opened and inspected. Gives complete relief to motor. It will tell you more about your engine in a minute than you can learn from a month of ordinary driving.

Sales Department

EDWARD A. CASSIDY CO., Inc.
285 Madison Ave., New York City

Manufacturers:

The G. Piel Co., Inc., Long Island City, N. Y.

The G-P Muffler Cut-Out

PARO Specialties for the GARAGE!



Ekern Portable
Garage Grease Gun.



Ekern Portable Work Bench



Axle Attachment

Ekern's Portable Garage Grease Gun

Gives quick service. Strong—durable—lasts indefinitely. No waste. Registers amount sold. Encourages the sale of more grease and oil.

Consists of heavy steel seamless cylinder mounted on three wheels; has five feet of hose (complete with shut-off valve and nozzle) attached to bottom of cylinder. Piston operated by crank with two sets of gears. Capacity of cylinder 20 pounds of grease or 2½ gallons of oil. Works equally well on liquid oil or hard grease. Keeps garage clean and greases cars quickly.

Ekern's Motor Stand for Ford Motors

Is very handy for doing Ford engine work. The Ford motor when taken from the car can be easily attached to this stand by the two screw caps where water inlet connection is fastened. Stand can be adjusted to hold the motor in any position to suit workman. Is mounted on wheels and movable anywhere.



Ekern Emergency
Axle No. 2

Ekern's Emergency Axle No. 2

With this emergency axle you can bring in any make of car disabled, with a broken axle, shaft or a locked differential. Indispensable to garages and machine shops. Be prepared for the cripples. Attached in ten minutes.

Ekern's Emergency Axle Stubs Nos. 1 and 3 for Fords

Holds firmly. No time wasted. In case of broken axle shaft, you can place FORD car on wheels in less than two minutes and pull the car in at any speed desired. To save time, place your order with your jobber—or if he doesn't handle these specialties, write us direct and send his name.

PARO Specialties will be exhibited at the Automotive & Accessories Exposition, Municipal Pier, Chicago.

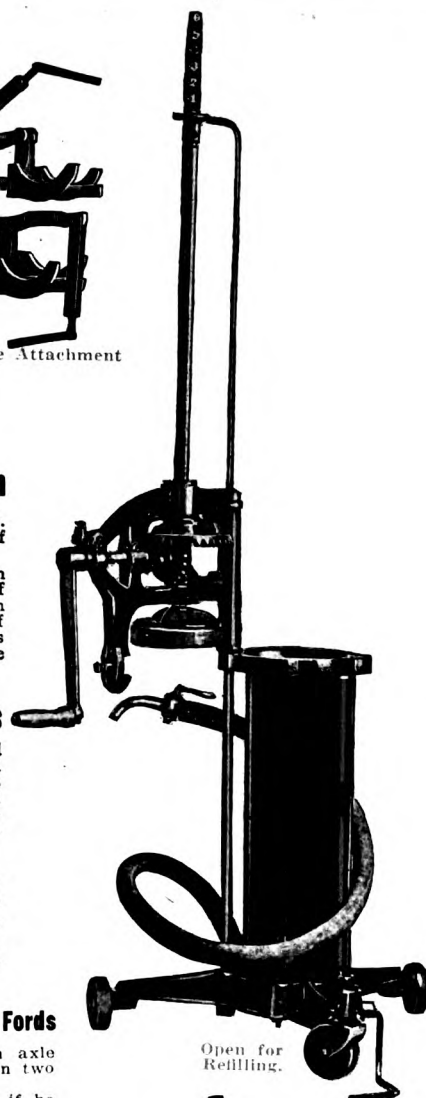


Ekern Motor Stand for
Ford Motors.

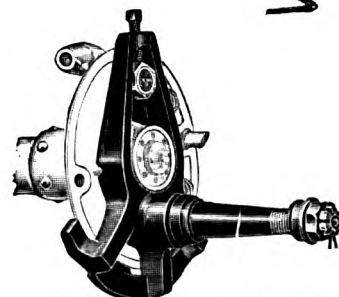
H. G. Paro Co.

DEPARTMENT "S"

1410-12-14 South Michigan Boulevard
CHICAGO, ILL.



Open for
Re-filling.



Ekern Emergency Axle Stub
No. 1.

ROMORT

GARAGE SPECIALTIES

Every Up-to-Date Garage Has Them

STYLE A AIR VALVE

Is a guaranteed device that has no equal for free air stations. Withstands any rough or hard usage. Air released only when the valve is pressed onto the tire.



Style A
List Price \$3.00

Equipped with the famous Romort Pump Connection Rubber.

STYLE B AIR VALVE



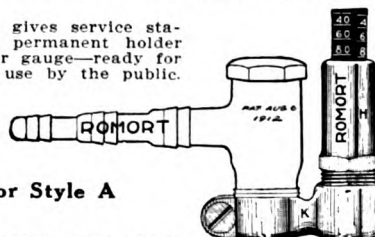
Style B
List Price, \$1.00

Is recommended to free air stations requiring a small and inexpensive air device. Stem fits any size tube. Guaranteed air-tight.

Strongly recommended for private or public garages and repair shops.

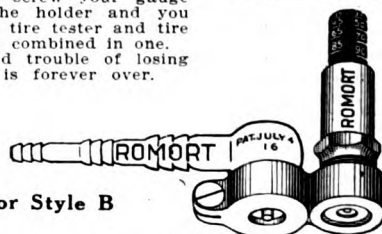
ROMORT TIRE TESTER ATTACHMENT

Style A gives service stations a permanent holder for their gauge—ready for instant use by the public.



For Style A

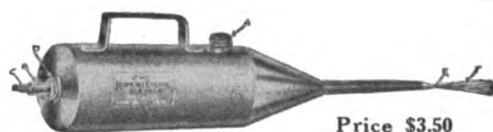
Simply screw your gauge onto the holder and you have a tire tester and tire inflator combined in one. The old trouble of losing gauge is forever over.



For Style B

Every garage with free air should be equipped with the Romort Air Tester attachment, but when ordering, specify whether you want style A or style B.

List Price \$1.50



Price \$3.50

ROMORT ENGINE CLEANER

Has no equal for cleaning the dirt and grease from automobile engines. Does its work with a thoroughness that will satisfy anybody. Holds two quarts of fluid. Common coal oil is best. With the long spout, the operator reaches every nook and corner of the machinery, almost impossible with the old method of rags and waste.

These and other specialties, including straight and angle pump connections, tank connections and rubber washers will be exhibited at the Automotive & Accessories Exposition.

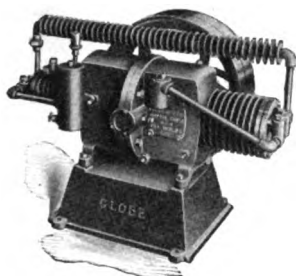
MANUFACTURERS
ROMORT MANUFACTURING CO.
OAKFIELD WISCONSIN

SALES DEPARTMENT
THE ZINKE COMPANY
1323 S. Michigan Ave. CHICAGO, U. S. A.

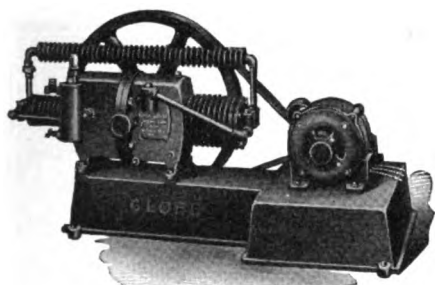
GLOBE

AIR COMPRESSORS

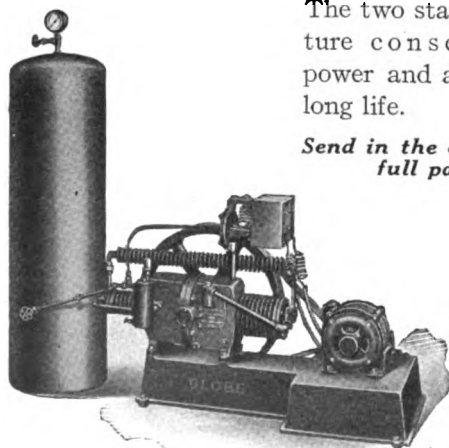
**If YOU expect to buy
an air compressor soon—
mail the information coupon
for GLOBE particulars**



Globe Type B, Two-Stage Compressor



Motor Drive Unit



Complete Automatic Air Plant

GLOBE SERVICE will prove the most satisfactory for your customers and the most economical for you. When buying an air compressor it will pay you to get the best.

GLOBE Air Compressors are unsurpassed where long life, continued service, clean, oil-free air, and low up-keep are demanded. So constructed that not a particle of oil or dust can reach the tire.

The two stage feature conserves power and assures long life.

Send in the coupon and get full particulars.

**GLOBE
MFG. CO.
Battle Creek
Mich.**

CLIP AND MAIL

GLOBE MANUFACTURING CO. A. G. & A. D.
Department B2, Battle Creek, Mich.

Gentlemen: Without any obligation on my part, please send full information on the items checked (x) below:

- ☐ Air Compressor for Line Shaft Drive.
- ☐ Air Compressor for Direct Motor Drive. ☐ With Motor.
- ☐ Automatic Air Plant for Free Air. ☐ With Motor.
- ☐ Air Compressor with Air Cooled Gasoline Engine.
- ☐ "DEAD EASY" Tire Pump for resale.
- ☐ I have or can get Electric Current.
- ☐ Single Phase. ☐ Two Phase.
- ☐ Three Phase. ☐ Direct. ☐ Voltage
- ☐ Frequency. ☐ Cycles. ☐ H. P.
- ☐ I have power ☐ Steam ☐ Electric Motor ☐ H. P.
- ☐ Gas Engine ☐ H. P. ☐ Garage. ☐ Tire Shop.
- ☐ Machine Shop.

Name

Date

Address

CLIP AND MAIL



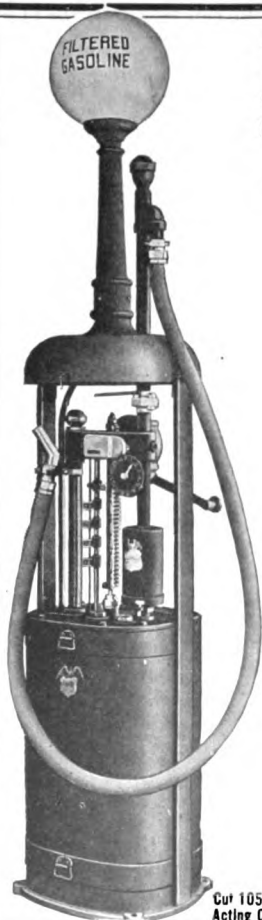
A ONE-PIECE PISTON RING

Simplicity is the outstanding feature of the GILL PISTON RING, and perfection in all results on account of the efficient joint which absolutely prevents the escape of compression and the passage of oil into the combustion chamber. Made from individual gray iron castings of high quality, GILL PISTON RINGS are being used successfully in thousands of cars, tractors and gasoline engines of every description today.

Perfect Piston Packing is the keynote of a successful motor and can be achieved by the installation of GILL PISTON RINGS.

Ask your jobber for GILL PISTON RINGS or write us today.

THE GILL MFG. COMPANY
357 W. 59th Street, Chicago



Cut 105—5 Gallon Double Acting Curb Pump.

RESULTS—The Reward of Thought and Preparation

Results are the object of all our efforts, and are only secured after much thought and preparation. Applying this to your garage business, patronage and profits are secured only after knowing what the motoring public demands, and preparing to meet their demands. You will agree that the motorist demands clean gasoline delivered in a quick, efficient and convenient manner. Meet this demand by installing

AMERICAN GASOLINE and OIL STORAGE EQUIPMENT

and handle your gasoline and oil in the approved and up-to-date manner.

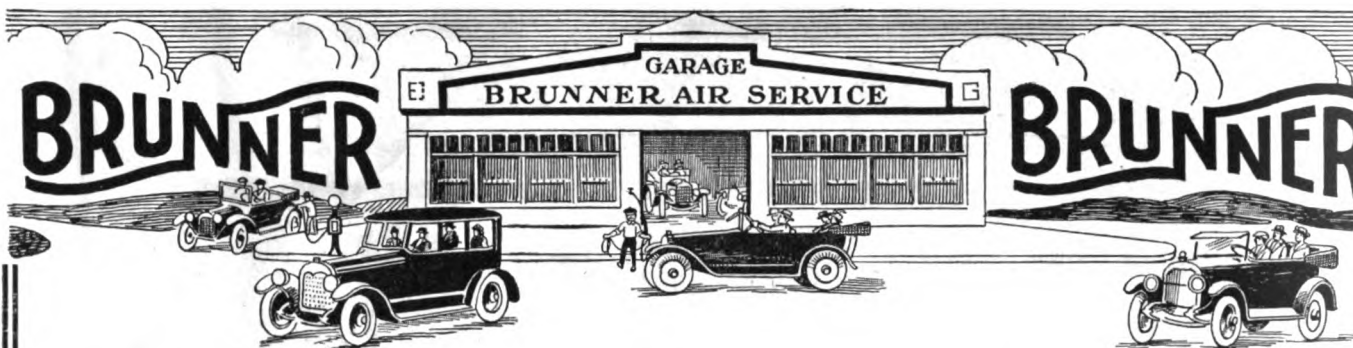
Write for bulletin giving complete information, prices, etc.

Salesmen wanted—good territory open

AMERICAN OIL PUMP & TANK CO.
Cincinnati, Ohio



Cut 101—1 Gallon Double Acting Curb Pump.



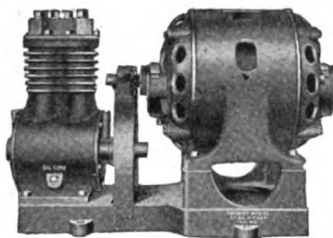
WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
 FOR YOUR CONVENIENCE

The confidence of the motoring public is the garageman's greatest asset. The average motorist knows that Brunner Service is absolutely dependable and has confidence in the Brunner Equipped Garage.

Without the confidence of the motorist no garage can be successful because the present day motorist expects and demands high class service and knows where to get it—he knows that the garageman who places Brunner Air Service at his disposal is a live wire with the interest of the motoring public at heart, and when he sees the Brunner Sign on a garage he has confidence in that garage and stops for air and such supplies or service as he may be in need of, and he never has to drive on his way disappointed.

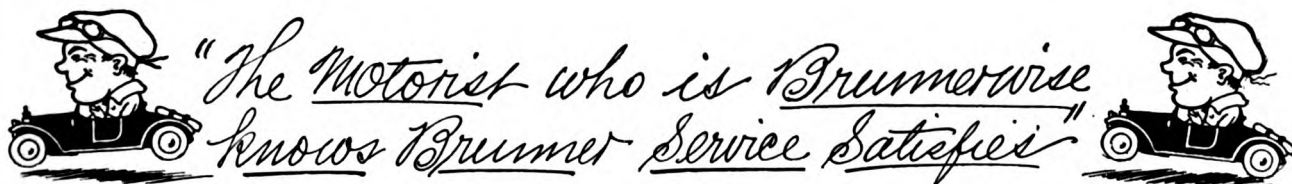
IF YOU INSTALL A **BRUNNER** AIR COMPRESSOR

You will find it just as dependable and satisfactory as thousands of other garagemen have found it for years. You will find it a wonderful time saver, and you will find it to be exactly as represented in every way.



You will also find the trade of the Brunnerwise motorist both satisfactory and profitable for the reason that he appreciates good service and is a good spender—he is a firm believer in reciprocity—he follows the Brunner Sign.

When you buy a Brunner Air Compressor you buy a quality product which has always been sold on its merit without resort to advertising promises of impossible performances, you receive it with the guarantee of both the manufacturer and the Brunner Jobber who takes your order that it will do the work for which it is recommended and be found exactly as represented—you cannot possibly go wrong with a Brunner Air Compressor.



Write for No. 15 Catalogue and the name of the Brunner Jobber covering your territory. Get acquainted with the Brunner line.

BRUNNER MANUFACTURING COMPANY

General Office and Plant
 UTICA, N. Y.

Cincinnati Branch
 CINCINNATI, OHIO

MIAMI TRAILERS

are the *missing link* to the transportation problem!



Miami Trailers are in demand everywhere -

When labor is at a premium, horses hard to get, and shipments almost impossible on motor trucks because of government demands MIAMI TRAILERS have never filled the bill as satisfactorily as they are doing now. *They are in demand everywhere.* There is not a line of business in your city which cannot use MIAMI TRAILERS profitably.

Business with YOU will be good if YOU sell them!

There is no reason in the world for you to be discouraged over business conditions if you sell MIAMI TRAILERS because our large output assures you of an uninterrupted supply.

MIAMI TRAILERS are war-time economy. Can be used with either motor trucks or

passenger cars. Made in a variety of styles and capacities. Substantially built for high speed and hard service. Long life guaranteed.

Let us show you what other dealers are doing. MIAMI TRAILERS will be the biggest business producer that you have ever had.

Wire at our expense for particulars or write at once

MIAMI TRAILER COMPANY

TRAILER STREET—TROY, OHIO

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

Don't Curtail Rural Garage Service.....	24
A Few Figures	24
"Pleasure Car? No".....	24-25
Driving Signals	25

GENERAL

What Is Your Goal?.....	11
Here Is Your Chance.....	12
Practice Thrift In Your Business.....	13
Manufacturer-Dealer Helps	14-15
C. A. Shaler Company	14
National Rubber Filler Company	14
Edward A. Cassidy Company	15
Atlas Auto Supply Company	15
National Wire Wheel Works, Inc.....	15
The Raybestos Company	15
Elgin Motor Car Corporation	15
The Electric Sign from Garage Man's Viewpoint.....	15
Accessories	16-17
Relco Called Ultimate Automobile Look.....	17
Fast Time Cross Country Made by Maxwell Truck.....	17
Hobart Brothers Make Universal Screw Cabinet.....	17
Governments Show Their Approval of Great Automotive Exposition	18
Read Your Business Trade Journals Is Advice of Great Bank President	19
Fourth Milwaukee Show Scheduled for September.....	19
Small Space Can Be Utilized for Business-Bringing Advertisements	20
National Dealers Make Progress in Campaign for 5,000 Members	21-48
Tire Accessory Opportunities	22-23
Cassidy Firm to Handle and Advertise Eceolene.....	23
Boensch New York Manager of Bearings Service Firm.....	23
Gobleville Man Devises Plan to Help Red Cross.....	25
W. H. Hobart, of Troy, Answers Country's Call.....	25
Amazon Organization Aids Dealers Sell Tires by Advertising Helps	26-38
Fire-Choke Offers Profit Chance for Live Automobile Tradesmen	27-52
New Rules for Labor Recruiting Adopted by National Government	28-52
Medinah Temple Taken for Big Jobbers' Show.....	29
R. H. Spear, President of All-American Truck Firm.....	29
Definite Information a Requisite for Success in All Business Lines	32-50-52
Syracuse Woman Aids Sales Work of Big Cash Register Organization	37
Miller Firm Helps Train Army's Tire Repair Men.....	38
Woman Agency Manager Sells to Both Sexes.....	38
Women Drivers Release Men for War Service.....	38
Liberty Dealer Publishes a Monthly House Organ.....	38
Trucks Carry Used Cars to Be Sold in Richmond.....	40
A Vital War Measure	40
War Tax on Horsepower, Not Car's Original Cost.....	42
Holcomb Heads Williams Foundry & Machine Co.....	42
No Government Order on Hours to Sell Gasoline.....	42
Bailey Ball-Thrust Firm Builds New Chicago Plant.....	48
Slater New Sales Chief of Williams Foundry Co.....	48
New Regal Plant Owner Plans Service to Users.....	52
Plans for Any Shortage in Supply of Gasoline.....	52

DEPARTMENTS

How to Make the Shop Pay.....	29
Welding, Cutting and Brazing	30-31
Mechanical and Engineering Problems	42
Accessories and Garage Equipment	44-46
Buyers' Reference	64
Index to Advertisers	65

American Garage & Auto Dealer, Inc.

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"NORMA" PRECISION BALL BEARINGS

(PATENTED)

The difference in price between an ordinary ball bearing and the best ball bearing, is never large. At most, it is but the tiniest fraction of a percent of the total cost of a car or truck. But the difference in the service rendered may be tremendous—may mark the distinction between satisfaction and dissatisfaction.

"NORMA" Precision Bearings are the standard bearings in the high-grade magnetos and lighting generators because the makers of this apparatus know from actual experience that the "NORMA" price is a premium on the safest insurance against bearing troubles.

Be Sure—See That Your
Electrical Apparatus
Is "NORMA" Equipped.

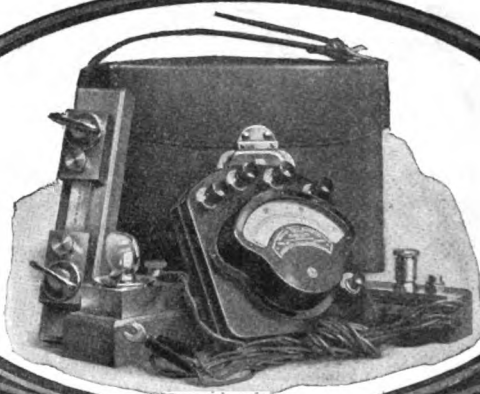
THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.





Bespeaking Patience

It has become necessary to advise prospective purchasers of the Weston Model 280 Garage Testing Instrument that deliveries can no longer be made promptly. Under present war conditions, there are unusual requirements which must receive our consideration in advance of commercial orders.

For this reason, we can accept your order only on the basis of delivery when possible. We suggest that you place it as early as you can.

Appreciating fully the needs of our customers and that the radical superiority of the Weston Model 280 Garage Testing Instrument is now well known to Garage and Service Station men, we promise to execute orders in the order of their receipt and as quickly as conditions will permit.

We are confident that this frank explanation of the situation will be accepted by prospective purchasers in the co-operative spirit in which it is submitted.

WESTON ELECTRICAL INSTRUMENT CO.
30 Weston Avenue Newark, N. J.

23 Branch Offices in the Larger Cities



AMERICAN GARAGE & AUTO DEALER

Comprising
AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX, No. 8

CHICAGO—Detroit—New York

August 1918

What Is YOUR Goal?

Ten years from now where will YOU be? Will YOU be looked upon as the most successful automobile dealer, garageman, or repairman in your city?

Is YOUR business compass headed in the right direction? Will YOU be able to stay clear of trouble? Will you reach port?

When YOU look ahead into the future, don't get discouraged if the path is steep and rugged. Every success which is really worth while has trials mingled with joys.

STICK IT OUT—KEEP PLUGGING! SUCCESS beckons to those who work diligently and efficiently. Everything you want you can have, if you will simply STICK TO IT.



Here Is YOUR Chance

This is the era of big opportunity for automobile dealers, garagemen, and repairmen. *But there's no place for the grumblers or the discontented.*

Though passenger car and motor truck production has been curtailed so as to satisfy war demands, there's plenty of chance—*YOUR* chance to do and sell other things to equalize and retain your volume of business. First, last and always, you must hold your customers in line. To do it, several plans are adaptable.

There's a big market for you in selling automobile accessories. You can substantially increase *YOUR* repair business, as new passenger cars are scarce and will get scarcer, so that people will desire to keep their used cars or old cars in "tip top shape."

You can sell trailers, truck units, tractors, and farm electric power plants. You can broaden out and sell the farmers things which they need for the farm or home.

Do you really appreciate the excellent opportunities you have? Small town dealers, garages, and repair shops have never been in as secure a position as they are at present. Right next door to the greatest wealth in the United States—the undisputed wealth of farmers, you are in position to cater to a class of trade that is not only receptive, but which has a pocket-book of *increasing* contents or purchasing power.

The farmers this year are making it possible for the United States FOOD ADMINISTRATION to anticipate the largest crop yields in the history of the country, and it is the spirit of such farmers, as Lloyd H. Nelson, New Jersey farmer, who recently addressed a letter to the U. S. Food Administration, as follows:

"It is clearly my duty to risk all I possess. It is my duty to take a full risk in planting as many acres as my means will permit. This I am doing in 1918. Having leased two extra farms, I propose making this year the supreme effort of my life. If I make a good profit, it will be fully earned. If I but make expenses and produce four times as much food as last year, it will be my opportunity to give strength—to give courage to help win. I am planning to farm to the extreme limit," * * *

that will make it possible for you to expand your business in the same ratio that he and other farmers may increase their acreage. Whether or not you are equal to the occasion rests with you. Nobody ever achieved material success who was not willing to put his shoulder to the wheel and push.

In a small Ohio city of only 1,000 population is a firm which does an annual business of \$600,000 with the farmers. They literally honeycomb their territory, which extends over 6 counties, so that every possible prospect is regularly interviewed. And, in their campaign to produce business, circulars, letters, and a monthly price list are used.

You might take a little lesson from this illustration.

Why not anticipate what your trade wants by sending them pertinent reminders of the accessories, or other agencies you are representing. Don't wait until they come to see you—sometimes they don't come—but go after them. Practice the habit of meeting them face to face—a good handshake once in a while is appreciated by your customers. You could spend many a profitable morning or afternoon by making a few personal calls.

Friendship in business is an invaluable asset—it's the basis of business success. You have a telephone—do you ever use it? When you have something especially interesting to sell FARMER JONES or FARMER SMITH, why not call him up?

Get out some letters or circulars occasionally—at least once every month, and compile a list thereon of the nationally known popular accessories you have for sale. If you have a MOVIE theater in your town, rent a reel, so as to familiarize your prospective trade with your whereabouts.

There's no sense for you to sit down and expect business to come—because it won't—but you can invite it to come by persistent and systematic follow up.

Jobbers and manufacturers will be glad to co-operate with you in any campaign that you may conduct to get business.

Create a longing or desire on the part of your trade to want to re-visit you. Give them real-honest-as-close-to-100 per cent good service as you can. Be thoughtful and courteous. They like attention. They like the unusual. Give it to them!

George M. Reynolds, president of the Continental & Commercial National Bank, Chicago's largest bank, in a recent issue of the American Magazine said:

"The 'all round' man is the highest type of human product, because he is able to meet all kinds of people on terms of mutual interest and understanding. But—well, I guess it is the difference between a tree and a bush. A bush starts to put out branches from the ground up. It is a pleasant object, a nice bush is. But it never gets very far. A tree has one central trunk, which stands like a pillar of steel against all the buffets of storm and stress. And it goes on, up and up; climbing, ever climbing higher. The branches are fine enough. But they are not the tree! The thing that stands and gets somewhere, and holds the whole growth together, is the central trunk. That, to my mind, is Purpose."

You never had a better chance to cash in—and probably you will never again have a chance so good as now. Be wise therefor, and solidly entrench yourself with your trade, and thus be best equipped for the present and after-war business. Good years are ahead of you, if you but realize it.

DETERMINE TO BE THE LIVEST AUTOMOBILE MAN IN YOUR COMMUNITY—THEN BE HIM.

Practice Thrift In YOUR Business

The modern watchword in business is wise management. Since the war started possibly you are one of those who has joined the thrifty savers. In YOUR household and other activities you have perhaps adopted more saving or economical habits. *But to what extent have YOU done so in YOUR business?*

To practice thrift is a commendable virtue. A man's success is usually traceable to his frugality of habits. And so the reverse is true—if a man will not save, neither can he expect to prosper.

Now is the best time to give YOUR business a thorough house-cleaning. Whenever YOU can do so, discard business methods which are antiquated or expensive, in favor of new modern methods which will help you to secure economy and good management.

Get the habit of sensing the value of little things; because they may appear to be small or insignificant doesn't necessarily mean that they are not important. In the construction of mammoth bridges, buildings, guns, ships—the little details count as much in the program as the larger details.

Have YOU ever stopped to analyze the reasons why another automobile dealer or garageman doing no larger business than you, is able to show a larger profit? Step into his place of business and you may be amazed at its immaculateness; its very atmosphere reflects the character of its proprietor.

That man has early and wisely cultivated the habit of thrift. When you find a man who can take good care of his business, who wisely uses his tools and materials, who discards or frowns upon everything pertaining to waste—you have a thrifty business man.

Don't Skimp Jobs.

When a job comes into your garage, remember that if you skimp or hurry it without doing it rightly, you are not only a waster but you have irreparably injured your business by causing dissatisfaction in the mind of your customer, so that the next time he has work to do, he will naturally go elsewhere. Skimping never pays—neither does mediocre work. *The job which is well done is the best sort of advertising you can do.*

A farmer thrives by good husbandry, just as much as trees depend on good soil, or cattle on rich pastures. Unless YOUR business is organized so that it will show a minimum of waste incidental to earning a liberal margin of profit, better reconstruct it.

Even though you may be justly proud of the way you conduct YOUR business, start today on a bigger scale

to practice thrift in your business. Anything which is a detriment or a drawback to the larger goal of success, should be thrown overboard.

Thrift does not mean the denial of money-saving, labor-saving inventions—it encourages their introduction. Anything which will enable you to double your man power to increase and better your business is the wisest sort of investment. In a recent issue of the Saturday Evening Post, an editorial entitled "Every Little Two-Bit Helps" was appropriately published, of which the following is a very suitable extract for practical application to the automobile dealer, garageman, and repairman:

Due for Changed Habits.

"War or no war we were due for a change of habits in this country. There has long been need of a systematic course in thrift. Meanness and niggardliness have never been American faults; but thrift and prudence have not been American virtues. Both for the good of ourselves and for the good of the country it is high time that we learned to substitute substance for show, comfort for flashiness, a bank balance for unwise and unpaid bills. A high standard of living does not mean waste; liberality does not mean prodigality; comfort does not mean competition in spending—a pitiful pretense that we can afford things that are not worth having. 'I can't afford it' are hard words for the average American to say, but in the very act of saying them he is on the way to being able to afford it.

"Thrift is simply the happy medium between recklessness and meanness. It is right living, peace of mind and opportunity to get ahead in the world. It is something much bigger and broader than buying War Savings Stamps and Liberty Bonds, though they are a concrete expression of it and a first aid to saving, good for you and good for your country. But America must take on as a permanent investment the big, character-forming idea behind them.

"No man by giving can escape the obligation to save. We must both save and give. But there are too many men who brag about doing their bit when they have given two-bits; too many who assert that we must give till it hurts—somebody else. Look over your budget and see what you can squeeze out both to give and to save. Don't be afraid to say 'I can't afford it.' If two-bits is all you can afford to give, and another two-bits weekly is all that you can spare from necessary living expense for thrift stamps, it is still well worth while. EVERY LITTLE TWO-BITS HELPS."

MANUFACTURER - DEALER *Helps*

Editorial note:

Starting with this issue of the AMERICAN GARAGE & AUTO DEALER there will be regularly presented in this department, an outline of the various kinds of dealer helps which are supplied by automotive manufacturers.

The modern automobile dealer and garageman is now looked upon as a *merchant* in the same sense of the word as any one else who has a retail problem or who enjoys relations with the ultimate buyer—the consumer.

C. A. Shaler Company

We furnish quite an assortment of different circulars, window cards, etc.

This sales material is only sent on request, although we do everything that we can to encourage the dealer to request our literature or display material. We know what a lot of waste there would be if this sort of sales assistance were distributed indiscriminately and when sending it to the dealer who requested it, we always write a letter explaining how if used it will help him increase his profit and that if it lies on the shelf, it will not do anybody any good.



New Type of Window Display Originated by Shaler Firm to Enable an Accessory Merchant to Make a Striking Display From So Small a Stock as Half a Dozen 5-Minute Vulcanizers. The Backgrounds Are Brightly Colored and Attached to the Standard Vulcanizer Package as Shown. The Units of This Display May be Used Separately in Different Parts of a Store if Desired.

In addition to the material we have enumerated above, we furnish newspaper electrotypes to dealers who will use them and when they ask for our co-operation we write and lay out advertisements for them.

M. E. FABER, Advertising Manager.

Editor's Note.—More Shaler sales material is shown in an article on Tire Accessory Opportunities on pages 22 and 23 of this issue.

National Rubber Filler Company

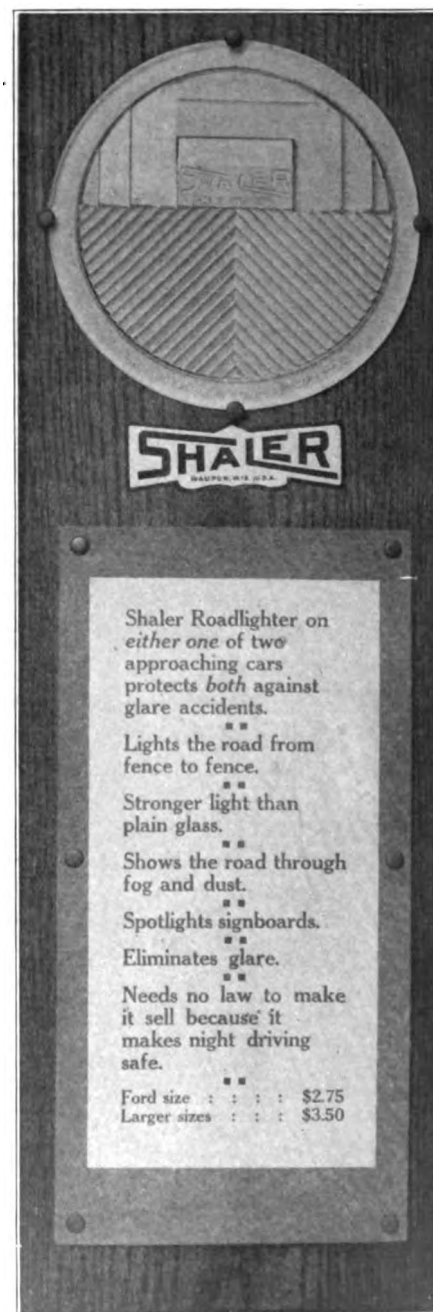
We do our advertising nationally in the leading automobile magazines in the country. We do not do any local advertising, we leave that with the dealer and sales

We have long felt that such a department as this would be of invaluable help and inspiration to our subscribers in better familiarizing them with the efficient selling aids and helps that they may anticipate from the manufacturers whose products they are either now selling or will sell.

And so in the language of each manufacturer will we reproduce verbatim an outline or resumé of the selling aids which are gladly furnished to dealers by them, *free for the asking*.

agent, we make the discount sufficient that it will cover for his profit and for all advertising, and we leave that part of it with him entirely.

We furnish him with all the list price folders that he may want. We usually send a bunch



Oak Board, Real Roadlighter, Copy on Light Brown Photo Mount. Can be Hung on Wall or Used as Part of Window Display. The Roadlighter is Backed by a White Card to Make it Show up Better Even Than if There Were a Light Behind it.

with the first shipment and then he can order all he wants after that and we send them out to him free of charge.

We also furnish him free of charge all of the electros that he might want for advertising in his local newspapers.

ED. F. AYCOCK, Manager.

Shaler Roadlighter on either one of two approaching cars protects both against glare accidents.

Lights the road from fence to fence.

Stronger light than plain glass.

Shows the road through fog and dust.

Spotlights signboards.

Eliminates glare.

Needs no law to make it sell because it makes night driving safe.

Ford size : : : \$2.75
Larger sizes : : : \$3.50

Edward A. Cassidy Company

We only send sales literature to the dealers on request. Our salesmen are instructed at all times to bring out the fact that we have such literature for the dealers to their attention.

We do not ask the dealers to sign an agreement that they will efficiently and carefully use all literature sent to them. We tried to do this some time ago, and although the dealer would sign the slip, he would do very much as he pleased.

The kinds of sales help we furnish are as follows: Window Decorations, Display Counter Cards, Newspaper Electros, Folders and Circulars, Hangers.

L. M. LLOYD, Advertising Manager.

Atlas Auto Supply Company

We wish to advise that we furnish selling helps to dealers upon request of the dealers or request of our traveling men.

Our line of advertising matter consists of window decorations, display counter stands, signs, and circulars with the dealer's name imprinted.

We also furnish newspaper electrotypes and other electros upon request.



H. W. COLSON.

National Wire Wheel Works, Inc.

We use several methods of helping our dealers make sales of Pasco wire wheels in addition to the advertising that we do in the different automotive trade journals.

We furnish window decorations to our dealers. Newspaper electrotypes are also sent to those motor tradesmen who ask for them and we also supply them with folders, booklets, and circulars.

H. E. VAN HORN, Sales Manager.

The Raybestos Company

We are now offering a new dealer help to the trade and herewith is a picture showing the proper method of setting up this counter display.



We are packing one of these counter cutouts in each carton of 20 boxes of genuine Raybestos without wire for Ford cars. But, of course, when any dealer who is now purchasing or has purchased a quantity of this product from his jobber writes to us we will, upon receipt of his request, forward a counter display free of charge.

E. H. JOSSELYN, Advertising Department.

Elgin Motor Car Corporation

We help our dealers as much as we can to increase the sale and demand for our cars.

The only thing in the way of a window decoration that we furnish is a transparent decalcomania sign. These are furnished free to Elgin dealers.

We do not provide display counter cards.

Newspaper electrotypes and specially prepared advertisements are furnished by us free to all dealers.

Folders, booklets, circulars, catalogues, etc., are supplied to all dealers. We also furnish them with newspaper publicity stories to be run in their local newspapers.

We also supply dealers with pennants and banners to be used on Elgin cars.

A. L. CHAMBERS, Advertising Manager.

The Electric Sign from Garage Man's Viewpoint

Allowing for the difference of opinion which David Harum said was responsible for horse races, we can understand how it is that some shrewd business men are content to get along without an electric sign. But this is speaking of business in general. Among garage men, can there be a defensible difference in opinion as to need of an electric sign in their business?

Take transient business, for example.

Put yourself for a moment in the place of the stranger who drives into your town or section of the city. You need some gas, oil, or some kind of garage service. How do you find your way to the nearest garage? Do you go in to a drug store and look it up in the city directory? Surely not. Do you inquire your way? Perhaps. But more than likely you drive up the street looking to the right and left for a garage sign. The garage man who doesn't mark his place of business with a prominent sign, one that is bright and attractive by day and brilliantly lighted by night, absolutely

closes the door to hundreds of prospects for the things he has to sell.

This reasoning is so sound that it is difficult to see how any garage man who is out for transient business has overlooked it and failed to mark his garage long ago with one of the several types of electric signs.

So far as local business is concerned, the garage man is in the same situation with other merchants. The cheerful, brilliantly lighted place of business is the one that attracts trade. There is no surer nor cheaper means of giving lasting publicity to your name and business than through the use of a good electric sign.

ACCES\$SORIES

To the garage man who has gone into the automobile business simply because he is mechanically inclined and likes to tinker with cars, the carrying of a stock of accessories is a useless burden and probably will be unprofitable.

But to the man who has gone into the automobile business because he needs the money and wants to make money in every possible way connected with that business, accessories are just as essential as a gasoline tank.

These statements are being proved every day by many thousands of garage men. The man who spends all of his time in the repair shop or in selling cars most certainly will make a failure of the accessory business while the man who takes accessories seriously always finds them exceedingly profitable.

Just what are the possibilities in accessories and how near can the average garage come to them?

In the garage business there are only a few ways of making money. First—by the sale of cars; second—repair, livery and storage; third—selling accessories. Every one of these means profit. None should be overlooked. Too many garage owners pass up the handling of accessories simply because their attention has never been directed to the great opportunity they present.

Motorists Demand Accessories.

There is a big demand among motorists for hundreds of accessories that make motoring more pleasurable or less expensive. That fact is proved by the increasing business that is done each year by accessory manufacturers.

These manufacturers have to get their product into the hands of motorists in some way or go out of business. They show their confidence in their product by investing hundreds

of thousands of dollars in advertising to the consumer, in window display material, in circulars for the dealer to use. They offer almost every kind of service that a dealer could ask for. This assistance has been planned only after a careful study of the conditions that dealers are up against. Any dealer who avails himself of it cannot fail to be the gainer.

Of course some manufacturers are forced to secure distribution of their goods through mail order houses, others have had to seek the hardware dealer or the druggist as an outlet simply because garage men as a body have not realized the strategic advantage they possess by being in constant touch with automobile owners.

The hardware store, for instance, must go to more or less trouble and expense to get motorists coming its way for their spark plugs and grease guns because the instinctive impulse of the car owner is to buy these things, if possible, where his car is stored and repaired.

Car Owners Will Buy.

On the other hand, car owners go into garages almost every day and with the least encouragement will buy their accessories there.

No retail business conducted on the basis of taking only the easy sales, carrying a small, poorly assorted stock, and depending on supplying customers by ordering accessories one at a time as they are demanded, could possibly prosper. Imagine your grocer, when you ask for a bar of Ivory Soap, offering you a cake that he had used a couple of times and then trying to hold your business by saying that he would order some for you and have it in a few days. But that's just the kind of service many garages are giving their would-be accessory customers. And those are the garages

which are not going to find accessories profitable.

I remember one instance when trying to buy a tire pressure gauge, how the dealer hunted around in a box of rusty bolts and finally dug up a gauge, badly shopworn and expected me to buy it. If you had asked that dealer whether he "kept accessories" he would have answered correctly in the affirmative, he kept them instead of selling them.

To quote from a speech made at the convention of the American Association of Garage Owners:

"Fellow garage men, this business is ours. We have only to go after it, full of confidence that we can get and hold it. The garage business is apparently going through just what the small stores have gone through on the road to merchandising efficiency and success. First, they had to be pushed into getting and keeping on hand the things people wanted; second, they had to learn how to advertise and display their goods; third, they had to buy more carefully and take advantage of cash discounts.

"Garage men who are enterprising have noted the changes the retail stores have gone through and realize that the same forces are at work in their own field. The wide-awake garage man is after the accessory business, and he is getting it—more today than yesterday, and he is going to have more of it tomorrow than today."

One Man Saw Chances.

These true words were spoken by a garage man who has seen the chances there are for handling accessories in a business-like way and who has seized the opportunity to increase his profits.

The first step in making a success in selling accessories is to carry a

ACCESSORIES

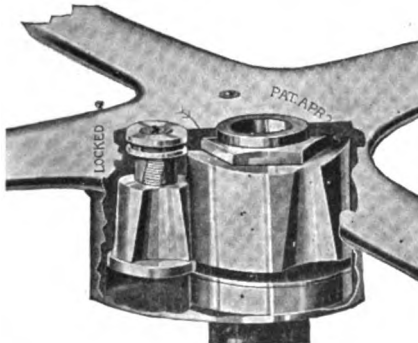
stock—not necessarily a big stock—of as many nationally advertised lines as practicable. Keep the stock clean and keep it out in plain view of every one who comes into the garage. Let customers know that you are ready to serve them to their advantage. You'll be surprised at the unexpected sales that will be made.

Then take advantage of the helping hand. Write to manufacturers for suggestions to help you sell more goods, for signs and circulars and window displays to advertise them. Simply use the methods that successful merchants in your own community are using.

Ask every jobbers' salesman how other accessory dealers are making a success. Adopt the hints your trade papers give you. Accessories are easy to sell and bring a good profit if they are only given half a chance.

RELCO CALLED. ULTIMATE AUTOMOBILE LOCK.

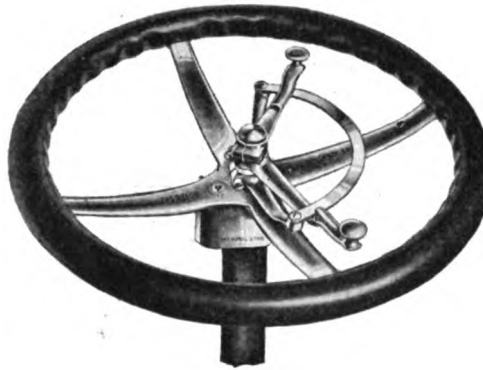
The Relco steering wheel lock is designed for all makes of cars and the manufacturer, The Reliance Co., styles it "the ultimate automobile lock." "It comes complete ready to install in place of the present steering wheel. The rim



is corrugated, 18 inches in diameter, and the spider is made of hard aluminum. The lock is incorporated in the hub of the wheel and is fitted with the King 19-spring-tumbler non-pickable lock.

The Relco steering wheel lock is approved by the Underwriters' Labora-

tories and it is stated that insurance companies will allow at least 15 per cent reduction in rates where Relco locks are used. Complete installation directions are attached to each lock. Terms



to dealers will be supplied by The Reliance Co., 411 Sangamon street, Chicago, which concern also manufactures the Mueller lock for Ford cars.

Fast Time Cross Country Made by Maxwell Truck

Finishing its ocean to ocean haul of 3,418.9 miles from San Francisco in seventeen and one-half days' elapsed time, the Maxwell Military Express reached New York City at 11 o'clock Saturday morning, August 3. Its arrival in Manhattan completed the first transcontinental freight run ever undertaken by a Detroit-made motor truck from a Pacific to an Atlantic port.

Carrying a ton of military supplies from Australia to the war front in France via the Lincoln Highway, the Maxwell left the Golden Gate July 17 and cut its set schedule of 34 days for the entire trip practically in half. It also beat fast freight train time for the same distance by two and one-half days.

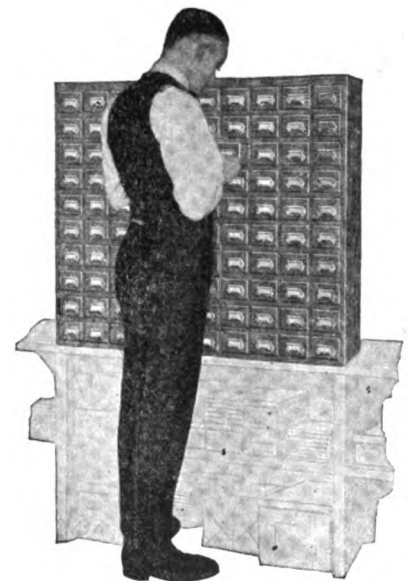
No less than ten daily runs of more than 200 miles were made by Ray McNamara, Detroit pilot, who drove the entire trip without relief. The biggest day's run was from San Francisco to Reno, Nev., 275 miles, the first day out.

Average speed of 200 miles daily was maintained with fuel consumption averaging 12 miles to the gallon. McNamara drove over the Sierras, the Rocky Mountains, the Great Salt Lake desert and the Alleghanies without mishap and only one tire puncture on the way.

HOBART BROTHERS MAKE UNIVERSAL SCREW CABINET.

The Universal screw cabinet is a convenient, serviceable and economical cabinet designed for screws, brads, nails, nuts, bolts, automobile accessories and other small articles. It keeps shelves clean and prevents duplication of stock. It will save its small cost many times in a year in providing a place where every screw or part may be put and where everything can be found instantly when needed.

It is substantially built of oak and steel. The back panel is of sheet steel, making the cabinet proof against dust and vermin. The sides and bottom of each drawer are made from one piece of sheet steel. The back and front of each drawer are wood, making an extremely light and strong drawer that will not stick or bind. The finish is light golden oak polished brass drawer pulls and card holders. Drawers are 8x3x2½ inches, inside measures.



The Universal screw cabinet is made by the Hobart Brothers Company, Troy, Ohio, being furnished in two sizes, 50 drawers, \$19.85, and 100 drawers (as illustrated), \$34.60.

The successful garageman or automobile dealer is he who realizes that he is not a cog in a wheel, but an individual with a definite object.

Governments Show Their Approval of Great Automotive Exposition

Federal and State Displays for Show of Trucks, Tractors and Accessories on Chicago Municipal Pier

The federal and various state governments have given their approval to the national exposition of trucks, tractors, and automotive equipment, at Chicago's Municipal Pier, September 14 to 21, by reserving display space in which to exhibit war-time features of governmental work. The United States government will also, in all probability, take advantage of the thousands of visitors at the exposition to maintain a complete recruiting office on the pier.

With four weeks to wait before the opening of the greatest automotive exposition ever held, the management is already confident of establishing new records in every department. As a matter of fact, the number of exhibitors who had signed up for space by July 1 exceeded the total number of exhibitors at the exposition last year.

Last year's show, the forerunner of this exposition, was held at the Coliseum. It would take three or four Coliseums to house the 1918 war-time exposition. The Municipal Pier, being the largest exhibition place in America, is the only building large enough to accommodate an event of such magnitude as the truck, tractor, and accessory exposition has already attained.

The great auditorium, which seats 4,000, has been reserved for the meetings of hardware men the first two days of the week, and for the threshermen of Illinois, Wisconsin, Iowa, Indiana and Ohio, on Thursday and Friday.

Musical programs have been provided for the exposition and with the music of the Jackies' band, stationed just across the driveway, on the south side of the long pier, visitors to the show will have plenty of musical entertainment.

The pier is very easily reached from

any railway station or hotel in Chicago. The surface cars all give transfers and make direct connections for the Grand Avenue line which runs clear out to the end of the pier, almost a mile from shore. Automobiles and taxi-cabs use the broad concrete roadway, while the street cars run on elevated tracks.



Show Manager H. V. Buelow

The north shore bus line stops at Grand Avenue within easy walking distance of the pier, and no one need fear that it will be difficult to reach the exposition. The pier is just outside the "loop," but it is the easiest place in Chicago to find because all Chicago is justly proud of its \$5,000,000 recreation center and show place.

A partial list of exhibitors follows:

Arrow Grip Manufacturing Co., Glenn Falls, N. Y.; Carborundum Co., Niagara Falls; Essenkay Products Co., Chicago; Twin City Varnish Co., St. Paul; H. G. Paro Co., Chicago; Ekern Bros. Mfg. Co., Flandreau, S. Dak.; Automotive Accessories Co., Baltimore; Perfex Radiator Co., Racine; New Lite Lens Co., U. S. Auto Supply Co., Brown & Caine, Inc., Metal Specialties Mfg. Co., Geo. D. Bailey Co., Jefferson Electric Mfg. Co., Atlas Specialty Mfg. Co., The Reliance Co., Harry Newman, all of Chicago.

Advance Accessories Corp., Bailey Non Stall Differential Corp., and The Zinke Co., Chicago; Milwaukee Auto Engine & Supply Co., Milwaukee; Shurnuff Mfg. Co., St. Louis; Romort Mfg. Co., Oakfield, Wis.; Champ Spring Co., St. Louis; Standard Underground Cable Co., Pittsburgh; Metal Ware Corp., Chicago; Burgess Mfg. Co., St. Joseph, Mich.; Blake Mfg. Co., South Bend, Ind.; Challoner Co., Oshkosh, Wis.; Cooper Auto Specialty Co., Thomasville, Ga.; Motor Car Equipment Co., New York City; The Duplex Engine Governor Co., Brooklyn; Van Cleef Bros., Edelman & Co., Cummings Foster Corp., and Perry Auto Lock, Chicago.

Defender Auto Lock Co., Detroit; McIntyre Mfg. Co., Chicago; The Dayton Wire Wheel Co., Dayton; W. D. Sullivan, Dole Valve Co., and Empire Auto Specialty Co., Chicago.

Koupet Auto Top Co., and Heinzelman Bros. Co., Belleville, Ill.; Presto Cloth Mfg. Co., Toledo; Wood Hydraulic Hoist Body Co., A. A. Lawder Sons Co., and The Wyman Sales Co., Chicago; Baslo Oil Co., Toledo; Balso Oil Co., Council Bluffs, Ia.; Falls Motor Corp., Sheboygan Falls, Wis.; Buller Coupler Sales Co., Madison, Wis.; White Star Refining Co., Detroit; American Manganese Steel Co., Chicago.

Atlas Auto Supply Co., and Commercial Truckmobile Co., Chicago; La Crosse Tractor Co., La Crosse, Wis.; Hooven Radiator Co., Chicago; Electric Steel Truss Wheel Co., Kankakee, Ill.; Guaranteed Tractor Corp., Chicago; One Wheel Truck Co., and Traffic Motor Truck Co., St. Louis; Winther Motor Truck Co., Winthrop Harbor, Ill.; Hudford Co., Chicago; Mechanical Belt Co., St. Joseph, Mo.; K & D Lamp Co., Cincinnati; New Era Specialty Co., Grand Rapids, Mich.; Eclipse Valve Grinder Co., Kansas City; Link Belt Co., Harding & Co., and Anderson Electric Specialty Co., Chicago; N. A. Petry Co., Philadelphia; Reflex Ignition Co., Cleveland, and Gray-Heath Co., Chicago.

The products of the following companies will be exhibited by the Gray-Heath Co.: L. P. Halladay Co., Streator, Ill.; New York Oil Co., New York City; A. C. Savidge Co., Indianapolis; Cuno Engineering Corp., Meriden, Conn.; Cole Gasoline Gauge Co., Chicago; Wright Roller Bearing Co., Philadelphia; Newtowne Horn Co., Brooklyn; "X" Laboratories, Boston; Hudson Motor Specialty Co., Philadelphia; Jas. P. Neerup Co., Chicago; F. W. Oettinger Co., New York; Lockfast Tire Carrier Co., Cleveland; Standard Speedometer Co., and General Appliance Co., Boston; Hansen Mfg. Co., Cleveland; Gibraltar Jack Co., New York; Bell Mfg. Co., Detroit; Continental Piston Ring Co., Memphis, Tenn.; A. E. White Machine Works, Eau Claire, Wis.; Harris & Reed Co., Chicago; Barcolo Mfg. Co., Buffalo, and Friden Mfg. Co., San Diego, Cal.

Nilson Tractor Co., Minneapolis; Hoosier Auto Parts Co., Muncie, Ind.; A. B. & B. Specialty Co., and Milwaukee Forge Machinery Co., Milwaukee; Higgins Spring & Axle Co., Racine, Wis.; S. K. F. Ball Bearing Co., Hartford, Conn.; Forschler Motor Truck Mfg. Co., New Orleans, La.; Sumter Division, Splittdorf Elec. Co., Chicago.

Read Your Business Trade Journals

Is advice of Great Bank President

George M. Reynolds, president of the Continental and Commercial National Bank of Chicago—which is the largest bank in the country outside of New York City—has a most interesting article on how to be successful in the August number of the *American Magazine*. He strongly advocates the reading of trade journals and other business literature by those who want to advance in the life work they have chosen. Part of his article is given below.

"Rules for success are everywhere. What most of us need is to cultivate that keenness of perception which will enable us to recognize them as of value to ourselves. Read to get something out of the book, magazine or newspaper that you can adapt to yourself. Observe people with the idea of obtaining something applicable to your own career. Each man and boy should have books pertaining to his own business, and read the magazines or trade journals devoted to his own business or profession. He should read the magazines that devote space to business in general and to stories of business life.

"Biographies, especially of men who have been leaders in your own chosen line, always are of value. In each you will discover some hint of conduct, some trait of character, worthy of being set down in your own rules. Men do not always rise over the same steps, but the general upward course is the same, and knowing the steps others have taken will ease many for you. Read at least one metropolitan newspaper. If you have not time to read the entire paper, then read the financial, market and business pages. It is astonishing to find how few persons ever read the pages devoted to their interests. Do not neglect the editorial pages. There you will find the best thought of the day expressed.

"Decide, among the first things, who your friends shall be. The entire fabric of society, politics, and, more than either, business, is built upon friendship. One of the most untrue of sayings is that friendship

ceases when business enters. It is at that point that friendship of the best sort begins and where it has its greatest test.

"Decision as to the kind of friends you are to have is vitally important to men, and even more important to boys; first, for the influence friends have upon the character of any human being, and, second, for the greater influence they have upon the reputation of any man. Cultivate the friendship of worthy and refined persons, not necessarily the wealthy or prominent. The more friends one has among persons of influence, the better; but there is always danger in these friendships, danger that you may cease to rely upon yourself and rely more and more upon others.

"To become a leaner is to become a failure. To rely upon friends is not only the most certain way to stunt your own growth but a practically certain way to lose the friends themselves. Real friendships are reciprocal and call for the giving of value for value.

"Not only is decision itself more important today than it has ever been, but it is more essential than ever to decide early. There always is a place open to the boy prepared to fill it. The great need of the world now, and one which probably will increase with the coming of peace, is for the boy who has the preliminary preparation for life work, who can step into office, shop or factory, and take up his duties without wasting his own time and the more valuable time of others in learning the rudiments.

"A business man is pretty much what he makes himself. To him is given the decision, and it generally is between business and pleasure. If a man chooses to play poker four or five nights a week, if he decides he would rather play golf every afternoon than stay in the office, if he aspires to be a society leader, he must not complain if his business suffers.

On the other hand, if a man makes money-getting his whole ambition, he need not be surprised to find himself disliked or to discover that his better instincts are being stunted.

"After all it is personality that counts, and your personality is very much what you decide early in life it shall be. Personality embraces the qualities of neatness, cheerfulness, courtesy, alertness, patience, unselfishness and appreciation of human nature. These qualities spell efficiency, and, always, efficiency spells success.

"To sum up, therefore, these are the essential rules, as I see them:

"Choose your life work early.

"Make your own rules of conduct early.

"Choose your friends carefully.

"Do more than the routine work of your job.

"Decide quickly in all matters, and act promptly.

"If right, ignore criticism; if wrong, change without delay.

"Practice economy. Be neither extravagant or niggardly.

"Avoid depending upon your friends. Give as much as you receive from them.

"Practice diplomacy—it smoothes the rough spots and gives you the advantage on the next move.

"Cultivate cheerfulness, to enable you to carry the necessary and throw off the unnecessary burdens.

"Indulge in sufficient play and recreation to keep the body strong and the mind vigorous.

"Be square with yourself as with those with whom you are associated."

FOURTH MILWAUKEE SHOW SCHEDULED FOR SEPTEMBER

The fourth annual automobile show under the auspices of Milwaukee Automobile Dealers, Inc., is scheduled for September 9 to 14 at the Wisconsin State Fair.

The exhibition will be conducted under the management of Bart J. Ruddle, 316 Brumder building, Milwaukee, Wisc.

Small Space Can be Utilized for Business-Bringing Advertisements

Progressive Tradesmen Get Good Results from Snappy Announcements in Their Local Newspapers

Five 2-column advertisements and two that occupied but a single column are reproduced this month to illustrate how automotive merchants can tell their prospective customers about their business without undue expense.

Motor tradesmen should advertise in the daily or weekly newspapers of their cities and towns and by following out the same general plan used by the concerns whose advertisements have been shown in this series can certainly increase their profits.

The advertisement at the top appeared in the Kearney, Neb., Daily Hub and shows how the Midway Motor Co., the "official" Prest-O-Lite service station—made plans to begin cashing in on the acquisition of a new battery expert to take charge of that department of its establishment. This advertisement was 7 inches deep.

The Manley-Thompson Co., authorized Ford agent at Tacoma, used a space 8 inches deep to inform the motorists of the Washington city about its new location. Mr. Manley and Mr. Thompson tell that there is more than 22,000 square feet devoted to Ford sales service, repairs and accessories in their new place, but do not fail to mention that accessories and storage facilities are maintained at the old location.

Evidently the Galena Vulcanizing Company feels confident of the ability of its repair men to fix badly damaged car tires. Part of its 3-inch space is taken up by the cut showing a man examining a very much banged-up casing.

but the picture bears the message "It can be repaired."

Two inches deep was the size of the Babb's Garage advertisement in the Four States Press of Texarkana, but in this small space a bid is made for repair work on all makes of cars, mention being made that radiator and electric work is a specialty. The garage also supplies prompt taxicab service.

The Sherman Auto Company at Greeley, Colo., used a space 3 inches deep to tell about its facilities for guaranteed repair work and state if a job is brought in that cannot be fixed no charge will be made. For the benefit of new customers the advertisement gives the name of the man to ask for when bringing in cars that need fixing.

In its 3-inch, single column space, the Missoula Electric Supply Co. emphasizes to Montana motorists the two big features of automobiling—pleasure and safety. The first named is used to further the sale of spotlights and the safety argument is employed in an effort to make car owners buy bumpers.

Six inches of a single column was used by the Western Motors Co. to tell San Francisco folks about the Maxwell. Economy and durability are played up and instead of printing a f. o. b. factory price, forcing prospective buyers to do a lot of figuring on freight rates from Detroit to the Pacific coast, the concern gives the figure at which it sells the Maxwell in San Francisco. The company also explains that immediate delivery can be made.

WE HAVE BEEN FORTUNATE IN SECURING
THE SERVICES OF
Mr. Wm. Noble,
OF HASTINGS

To take full charge of our battery room. With
eleven years of battery experience, MR. NOBLE is
a worldwide battery expert and capable of render-
ing dependable service to all storage battery
owners.

—
ADVICE AND DISTILLED WATER FREE
—

Midway Motor Co.
Official Prest-O-Lite Service Station

Ford
SEE US EVERYWHERE

**Manley-Thompson
Company**
(Authorized Ford Agents)
Now At:

1302 Fawcett Avenue
22,400 square feet devoted to sales-
rooms, Ford service, accessories, repair
shop, offices and the best storage
in Tacoma.

1302 Fawcett Avenue
Main 1515
Harry R. Manley, President
R. B. Thompson, Sec. Treas.

Storage and Accessories at Old Loca-
tion, 902 Tacoma Avenue

IT CAN BE REPAIRED

**Curing Tire
Troubles**

is our special business. A
fully equipped shop, the right
materials and thorough skill
and experience enables us to
offer a prompt, dependable
service.

We handle everything from a PUNCTURE to the worst "BLOWOUT"

Galena Vulcanizing Co.
208 N. MAIN STREET
GALENA, ILLINOIS

THINK

How much pleasure you
would receive by having
one of our spot lights on
your car.

Also the feeling of safe-
ty one of our bumpers on
your auto would give you.

**Missoula Electric
Supply Co.**
Auto and Electrical
Supplies
Down by the Bridge

Maxwell
for
Economy
and
Durability

PRICE
\$925
HERE

IMMEDIATE
DELIVERY

Service That
Saves

**Western
Motors Co.**
1016 Van Ness St.

Babb's Garage

Expert Automobile Repairing on All Makes of Cars.
RADIATOR AND ELECTRIC WORK A SPECIALTY

PROMPT TAXI SERVICE

Phone R3.
107 State St.

Nothing!

BUT FIRST CLASS, GUARANTEED AUTO REPAIR-
ING LEAVES THE SHOP OF

Sherman Auto Co.

Nothing too hard for us to solve. Starting and lighting
a specialty. If you can bring us a job that we
cannot fix, there will be no charge

DRIVE IN AND CALL FOR ELLIS

National Dealers Make Progress In Campaign for 5,000 Members

President Vesper and Executive Secretary Peake Increasing Numerical Strength All Over Country



F. W. A. Vesper



E. E. Peake Copyrighted by Strauss-Peyton Studios.

Good progress is being made toward obtaining the 5,000 members for which the officials of the National Automobile Dealers Association recently began an intensive campaign. Much of the active work is being done by President F. W. A. Vesper of St. Louis, and E. E. Peake of Kansas City, the executive secretary. Mr. Vesper is also head of the Vesper-Buick Automobile Co., at the Missouri metropolis and chairman of the war service committee representing the automobile dealers of the country.

In carrying out the suggestions of the War Service Committee it sometimes develops that because of a misconception of the situation the local committees meet with a number of unexpected petty objections. Among those who are looking for some justification for refusing to comply with the War Service suggestions, the most prominent are those who insist upon an absolute order from the Government as evidence that the suggestions in question are authentic and in conformity with the

Government desires. For the benefit of those the National Association through its president, F. W. A. Vesper, gives the following information so that no misunderstanding will exist.

At the time the War Service Committees representing the industries of the United States were formed at Washington it was deemed important that one of these committees represent the automobile dealers of the United States. Such a committee was formed, consisting of fourteen members from the widely scattered sections of the United States and representing practically every type of car. This committee became active and made an exhaustive investigation at the conclusion of which certain recommendations were made to the Commercial Economy Board, which approved same and immediately decided that the best possible medium for which to carry out these recommendations in their broadest National fulfillment was the National Automobile Dealers Association, and accordingly the work was turned over to this organization which now has the matter in charge.

It might be mentioned at this time that

the Commercial Economy Board have not found it necessary to issue any drastic or explicit orders for conservation in any line of trade, and it naturally would be a catastrophe if such an order were required to the automobile industry before the conservation measures were fulfilled by the automobile dealers.

"There seems to be some misunderstanding in conception regarding the night and Sunday closing recommendations, made by the War Service Committee," said Mr. Vesper discussing the matter, "particularly as it applies to gasoline and other supplies which might indicate that the curtailment of the general use of automobile is contemplated.

"Nothing is farther from the facts, as the object of the suggestion when fully in force will tend to foster and encourage the utility use of an automobile to the fullest extent, and will cater to those who use cars for such purposes.

"As night and Sunday usage of an automobile is mainly for pleasure purposes, there is naturally a feeling that this can be reduced without any great hardship on

(Continued on page 48)



Tire Accessory Opportunities

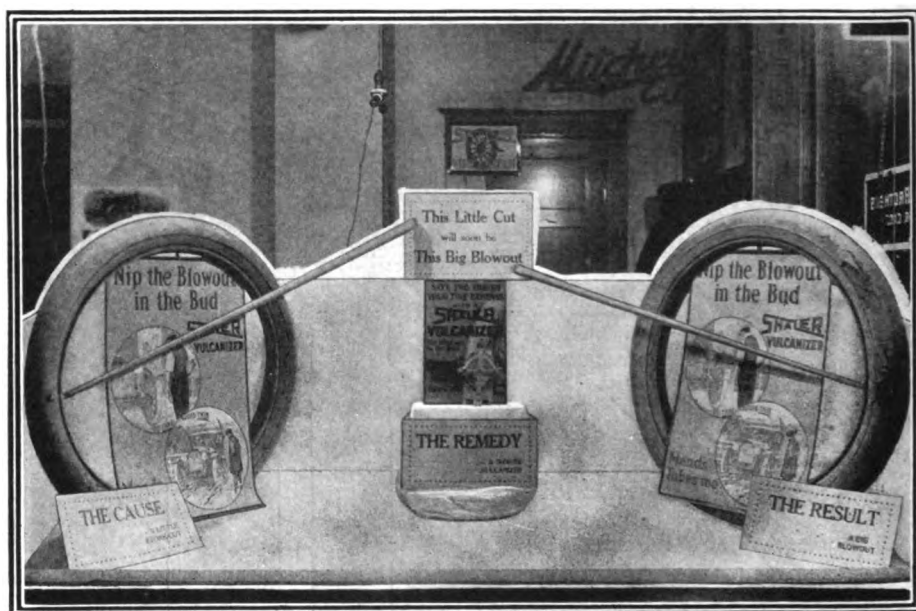
How It Profits the Dealer to Increase Tire Mileage—Some of the Profit-Yielding Accessories Which Bring This End About.

By M. E. FABER

It is asserted that any good tire should run 15,000 miles. Yet the average tire, with average lack of care, probably doesn't give one-third of that service before it has to be discarded.

Tires are the source of more trouble and expense than any other part of an automobile. Most of this is unnecessary and avoidable. It is the small, apparently insignificant, casing cuts that are neglected until they have admitted dirt and water to eat into the fabric, causing sand-pockets and blow-outs.

Every dealer will find it advantageous to co-operate with car owners by showing them the common sense methods of increasing tire mileage. By doing this, the dealer helps his



Shaler Sample Window Display With Only One Article in the Middle of the Window So That the Eye Is Focused on It—and a Few Lettered Cards



Vul-Kit Carton With a Different Story on Each Side

own reputation for selling good tires. That is, the motorist will give credit for the extra mileage to the tire rather than to the care he has given it; the dealer makes a profit on the tire accessories he sells; and by getting mo-

torists into the habit of watching their tires for the appearance of small symptoms of impending trouble, he increases the business of his tire repair department.

Here are a few leading tire accessories that the dealer can easily sell after he gains the confidence of his customer by showing the customer that he is really interested in helping him reduce tire expense and trouble. There are tire gauges for helping the motorist keep his tires up to the most efficient pressure, vulcanizers for mending tubes and small casing cuts, tube bags to prevent tubes from being worn out in the tool box before they are used, tire covers to protect the tire from light and water, reliners,

soapstone, tire irons, valves, pumps, etc.

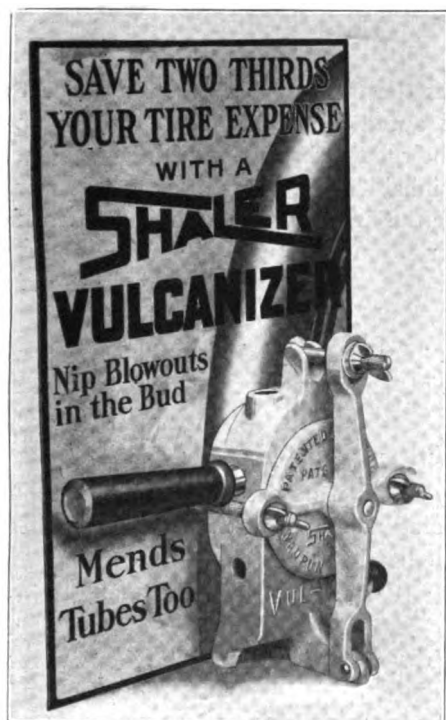
Every Motorist a Prospect.

Every motorist is a good prospect for one or more of these accessories, because every motorist is interested in avoiding tire trouble and getting more mileage from his tires. Besides this, no car is equipped with tire accessories and the customer must buy from some dealer.

A well-made tire, properly inflated, will deteriorate very little so long as the waterproof covering of rubber remains intact and keeps foreign substances from contact with the fabric. But sharp stones, car tracks and a hundred other things are continually cutting and tearing at it. Even the

hole left by a nail puncture may start an "infection" that destroys the strength of the surrounding canvas in an incredibly short time.

An effective preventative against needless tire expense is a vulcanizer that will enable anyone to give his tires the immediate attention they need. For the benefit of those who are unfamiliar with the vulcanizing process, we may say that it is comparable to the welding of metals. To repair a casing cut or a tube puncture, it is only necessary to clean the injury, fill it with scraps of raw rubber, and apply heat at about 265 de-



This Display Stand for the Vul-Kit and Ford Kit is Made of Steel, Lithographed in Four Colors. It Tells Not Only What the Vulcanizer Will do But How it Operates. The Display Shows the Vulcanizer Apparently at Work Sealing a Sand Pocket in a Casing.

grees Fahr. for 15 or 20 minutes. At the end of this time the new rubber will have united with the tire so perfectly that the point of union can hardly be detected by its appearance and cannot be distinguished by its texture or resiliency.

Vulcanizing is Needed.

Now, while it is possible to make a temporary tube repair by means of the time-honored patch, in order that the repair may be permanent the tube must be vulcanized. A casing repair, to be permanent, must be welded into

the substance of the tire. Casing repairs are by far the biggest expense savers, too, because they prevent and eliminate the most common cause of premature casing failure. Prompt sealing of small cuts, that look too small to be taken to a garage for repair, enables the tire to run until the tread rubber is worn clear through. By spending a little time on his tires occasionally any motorist can greatly increase his tire mileage as well as do away with roadside delay and trouble.

Some dealers have been a little timid about selling motorists vulcanizers, because they are afraid of losing their repair work. Now they realize that the sale of any accessory which helps get more mileage is a help instead of a detriment to their business, especially, if, as in the case of a vulcanizer, there is a good profit on the initial sale and then more profit in the vulcanizing materials that must be bought to use with it.

The recent request of the War Economy Board that automobile owners should make as many as possible of their minor repairs in order to release garage mechanics for war work points the way to the sales of many accessories that will help motorists to comply. The appeal of accessories which at the same time enable car owners to make a substantial saving for themselves is obvious. The rubber and fabric used in the manufacture of tires must be conserved or we will soon face a serious situation. Now is the time, too, for dealers to profit by an economy which everyone is anxious to accomplish.

Cassidy Firm to Handle and Advertise Eccolene

Announcement has just been made by the Eccolene Company, Detroit, that the Edward A. Cassidy Company, New York, will act as sales department and will have entire charge of the selling and advertising of Eccolene throughout the world.

Decision of the Cassidy concern to take the sale of Eccolene was made only after a thorough investigation of the product which has startled automobile engineers by the results shown under every test when used in treating the present day motor fuels.

Ralph De Palma has endorsed Eccolene after more than seven months of steady use. The Speed King proved conclusively that Eccolene gave a distinct increase in mileage, practically eliminated carbon, added power both to his touring car and his racing car with which he broke records unattainable by him with the same car last year; that it kept his motor cool, made starting much easier, thus saving the batteries.

Eccolene is compounded from seven oils that are perfectly blended and which, when added to the motor fuel, blend perfectly. With a four cylinder car one ounce is added for each five gallons of motor fuel and this amount is doubled with the larger cars. Eccolene puts burnable qualities into most of the motor fuel which is not consumed today, and which either passes off in smoke or passes through to the base of the motor to give trouble. Practically perfect combustion results. There is no waste residue.

Eccolene is non-volatile; it is in itself non-explosive; no chemicals or acids are used in its composition, such as ether or picric acid, benzol, toluol or klyol. It vitalizes the motor fuel. No injury can be done to the motor by its use.

The Cassidy Company made exhaustive tests before entering into the sales arrangement, adding the material to such well known lines as the Corning Glass Works, Rajah Spark Plug Co., G. Piel Co., West Side Foundry Co. and F. W. Mann Co.

Boensch New York Manager of Bearings Service Firm

Announcement of the promotion of B. H. Boensch to the managership of the New York branch of the Bearings Service Co., has been made by A. K. Hebner, general manager of the concern.



B. H. Boensch.

Mr. Boensch for some time has been a special representative of the concern and has been engaged in appointing distributors. Through his intimate knowledge of the company's business, he is well fitted for the duties which he has assumed.

The New York branch is one of the most important of the chain of twenty-two operated by the Bearings Service Co., in its service function to the motorists on Hyatt, Timken and New Departure bearings.

The appointment of Mr. Boensch is in keeping with the policy of the Bearings Service Co., to always fill the vacancies in its executive staff from its own organization whenever possible.

EDITORIAL REMARKS

Don't Curtail Rural Garage Service

It is the most natural thing in the world for the promoters of a reform to go too far. Moderation is not an American characteristic. There is too much dash and hustle in the Yankee to make him err in the way of hesitating too much. "Whole hog or none" is the motto of the average citizen. This tendency to go too far marks the attempt—laudable in itself—to economize labor by curtailing the service rendered in garages.

The National Automobile Dealers' Association has decided to ask its members to cut out service Sundays and evenings and, in order to secure the execution of the plan, urges garagemen to close their places of business during these periods. The plan aims to obviate the necessity of keeping open at all hours and tie up mechanics and helpers when there might be no rush of work. Garage men in large cities might arrange such a program, but country and small town dealers and repair shop men declare it will work a hardship on them and their customers.

The farmer, especially at this time of year, has no time to drive to town in the day time. If he wants his car tinkered up he will wait till the daylight work on the farm is done and then steal a few hours of twilight to make the necessary journey. Anybody acquainted with life in a small city or village in an agricultural community knows that the merchants do most of their summer business in the evening or Saturday afternoons. The small town garage man is no exception to this rule. The big share of his trade comes in the evening (or on Sunday), and it is impracticable for him to close up at such times. He must be there to serve his customers when they can come.

The farmer is an important factor in these days when the United States is feeding nearly the whole world, and no rule should be enforced to hamper the speedy and efficient performance of his task. The garage man in the small town is one of the farmer's valued aids. He is the man who repairs the truck, the tractor and the other machines that help to secure the crops. If the garageman and the farmer think the repair shop—and they do—should be open Sundays and evenings there should be no further argument against it.

A Few Figures

The United States government thinks very highly of the automobile as a war aid. Run your eye over these figures and comprehend what they mean:

On July 1, 1918, there were overseas, working for the American Army, 4,308 motor trucks of less than 1-ton capacity, 5,703 1½-ton trucks, 7,987 3-ton trucks and 3,420 passenger cars. More than 21,000 Yankee automobiles in active service in France, to say nothing of the

big fleets in this country! Not including, either 27,000 motorcycles. Besides, the prospective deliveries of motor trucks to the government for July were 4,797; for August, 4,355, and for September 4,448.

We'll say the automobile is helping win the war!

"Pleasure Car?" No!

It is high time that the term "pleasure car" be corrected. In the beginning it was carelessly coined to distinguish the passenger automobile from the commercial motor truck, but today the term "pleasure car" is misapplied in eighty-five per cent of the cases where it is used.

In these war times the term does a gross injustice to a vast majority of automobiles that are honestly engaged in earning their daily bread—meaning gasoline, oil and tires. If an inhabitant of Mars came to this war-shaken earth and for the first time in his life saw a roadster or a four, five or seven-passenger automobile gliding along, and was told that was a "pleasure car," he well might ask:

"Why do you run 'pleasure cars' during the war when all your labor, materials and money are needed to shorten the conflict?"

The thinking American would answer:

"That car is really a utility, a necessity, and is, in fact, mis-named. It is doing actual work in the business life of the community."

And that would be the truth in a big majority of instances. There are "pleasure cars" in operation today. The big automobiles that sweep along the boulevards hauling fat and overdressed rich humans to dinners and bridge parties, to theaters and other places of entertainments, are "slackers," but how few they are compared to the hundreds of thousands of cars which do necessary work every day, but which are unjustly included in the same class as "pleasure cars."

Thousands of physicians, of salesmen, of real estate dealers, and of business men of every description, depend on their machines to perform their work, earn their livelihood and help keep the wheels of our national life turning every day. In the country this is even more true. The farmer has a so-called "pleasure car," but he relies on it to get into town to get a part for a broken mower and do a score of other things necessary to keep his farm work moving. In city, town and country the "pleasure car" is almost invariably a "work car." This has become more evident since the war put such a burden on the railroads, for advanced passenger rates have encouraged automobile trips between points by hauling salesmen who find the change most pleasant in the summer especially. Many firms have found it profitable to furnish their men with cars and reduce their sales force.

A Chicago advertising expert, in speaking of another phase of the question, vacation travel, said recently:

"Vacations may come under the head of pleasure—but in another sense they are necessities. Everything possible has been done to discourage vacation travel by rail. The logical alternative will be the motor car, and if automobiles are available it is quite likely that this summer will see the greatest amount of automobile touring ever known in this country.

"But leaving vacation travel out of the computation, it is within the possibilities that the demands of farmers and salesmen for automobiles will alone call for a volume of output in a short time which will equal that that prevailed before the war."

Driving Signals

With the ever growing increase of motor vehicles on the highways a real need exists for some easily executed and readily understood driving signals. While for a

long time it has been the practice for drivers to hold out an arm to indicate that they were about to slow down or to turn a corner there has been no universally recognized method of indicating whether a motorist signalling is intending to stop or turn a corner—or if he intends to turn, the direction in which he proposes to go.

A simple plan for taking care of this phase of automobilism was suggested by J. N. Willys in this journal last month. His ideas on the subject were illustrated by pictures showing just how he thinks the signalling could be most quickly done and most readily understood. While a time may come when local, State or National legislation on this matter will be enacted, it would be a good plan if motorists generally were to adopt these methods voluntarily. This is a matter which could well be taken up by motor tradesmen generally, and the AMERICAN GARAGE & AUTO DEALER will be glad to send a copy of the page containing the pictures of the signals to any one who asks for it, whether or not they are subscribers to this journal.

Gobleville Man Devises Plan to Help Red Cross

W. F. Witte, who operates the Gobleville Garage at Gobleville, Mich., has devised a very effective plan of helping the Red Cross in its work for our men of war. The whole idea is well shown in the accompanying illustration of the hose attached to the "free air" pump of Mr. Witte's establishment.



W. F. Witte's Red Cross Helper

In a letter to this journal Mr. Witte states that he is proud of having originated such a device, especially for such a good cause, and suggests that his plan be followed by other owners of garages

and service stations. He tells us that during the first two weeks he had the donation box at work that it averaged \$1.50 a day, which he thinks was very good considering the number of free air stations.



IN THE SERVICE OF OUR COUNTRY.

William Guy Wall, who resigned as chief engineer and vice-president of the National Motor Car & Vehicle Corporation, to take a major's commission in the U. S. Ordnance Department, has been promoted. He has charge of the buying, construction and maintenance of tractors and armored cars and is now a lieutenant colonel.

J. D. Riker has resigned as production manager of the Cole Motor Car Co., Indianapolis, to enter the army.

A. H. Lipman, who has been advertising manager of the Essenkay Products Co., Chicago, has resigned to join the colors.

Ray Rhein, cost accountant in the accounting department of the Liberty Motor Car Co.; Detroit, Mich., recently enlisted in the United States navy, and is now located at the Great Lakes Training Station at Great Lakes, Ill. He was the twelfth man from the Liberty factory organization to join some branch of the service within two weeks.

E. S. Lee, director of sales of the United States Motor Truck Co., Cincinnati, recently yielded his desk to another and joined the transport division of the United States army as first lieutenant. Mr. Lee reported at Washington.

"The grave of Tammany, the Lenape Chief for whom the famous political body of New York is named, may be seen at Doyleston, a quiet little village of about 4,000 in Pennsylvania," according to Points of Interest in the Automobile Blue Book. But in New York, where the spirit of that Indian warrior is found, it is not so quiet.

W. H. Hobart of Troy Answers Country's Call

W. H. Hobart, of the well-known firm of Hobart Bros. Co. of Troy, Ohio, which makes a specialty of battery charging equipment, answered the call of his country several weeks ago, and is now with the Fourth Regiment, 159th Depot Brigade, Camp Zachary Taylor, Ky.



W. H. Hobart

It is such young men as Mr. Hobart that spell "success" for the allies, as he is of sturdy, fearless stock who can be counted upon to do his part and bit whenever the occasion may warrant.

If Mr. Hobart makes as good a soldier as he has a manufacturer, he will be "some soldier."

His many friends in the automobile industry tender him their very best wishes and hope that he will come back safely.

Amazon Organization Aids Dealers Sell Tires by Advertising Helps

Considers Tradesmen an Integral Part of Concern and Makes Announcements in Their Names

Motor tradesmen who wish to increase their business in tires can learn many things that will be of advantage to them by obtaining the little 16-page booklet, "The Mighty Amazon Plan for Helping the Dealer." It is issued by the Amazon Rubber Co., at Akron, Ohio, and contains much interesting information compiled by Advertising Manager C. J. Hazen and his staff.

On the page devoted to "The Ama-

son sold to the ultimate consumer through dealers, and if we stop our merchandising activities after only the dealer himself has been sold, then we may as well stop manufacturing, for we would never reap the benefits of that mighty power in merchandising—voluntary repeat business!

"We are also fully aware of the fact that we cannot secure this voluntary repeat business from the dealer UNLESS HE IN TURN SE-

Products to the consumers in his territory, and to advertise over his name, as he is the man from whom these products MUST be purchased—there being no other Amazon dealer in his territory!

"Immediately then, that the dealer lays in his stock, we get behind him with all the combined power of our sales and advertising departments, and give him a 'flying start' in his territory! And all of this advertising co-operation we furnish him FREE OF CHARGE, feeling, as we said, that he is virtually our sales department and should not be asked to stand even a portion of the expense."

Under the heading, "Four Powerful Mediums," the booklet contains the following information:

"There are four powerful methods of establishing a product in a territory which are described in the following pages, viz.: Newspaper advertising, direct mail advertising, outdoor advertising and window displays or store advertising.

"These four mediums closely linked together and followed through consistently over your name will firmly establish Amazon Products in your territory and will make you stand out strongly as 'The Amazon Dealer.'

"The direct mail, sent out regularly, backed by the newspaper advertising run at the same time the circulars are sent out, and reinforced by the continuous showing of the outdoor and window display advertising, will bring you the bulk of the automobile trade in your territory.

"Purchasers will come to your store for many other things besides Amazon Products, and your entire business will be strengthened and increased by this advertising.

"Taking into consideration the fact that this support does not cost you

(Continued on page 38)



Effective Window Display Designed by Amazon Expert

zon Policy" appears the following:

"Our dealers are a vital part of our organization—to be an Amazon Dealer is to be an integral part of The Amazon Rubber Company.

"We believe, in a word, in making the Home Office the 'Manufacturing Department' and the dealer the 'Sales Department.'

"For ALL Amazon Products are

CURES IT FROM HIS CUSTOMERS!

"Our work, then, is to help the dealer move his stock, and with this end in view we have prepared a plan of advertising that is, we believe, stronger and more effective than any tire campaign that has ever been launched.

"Our work is to advertise Amazon

Fire-Choke Offers Profit Chance for Live Automobile Tradesmen

Flame Annihilator Marketed by Flexlume Sign Concern Comes in Brown Cylinders Convenient to Carry on Cars

Fire-Choke is the newest among fire annihilators.

Although it is eight years old, if you date from the time the chemical was first compounded, it is now going on the market in a big way for the first time, and dealers who are already handling it predict that it will not be long before every car in the country carries one of the little brown cylinders, for Fire-Choke has many points which particularly commend it for automobile use.

You want to know what Fire-Choke is?

Well, it is a dry chemical—not unlike common salt in appearance. It comes in an attractive brown cylinder which is attached to the car by means of a neat bracket. The best way to tell what it will do is to describe a test any Fire-Choke dealer will make for the asking. This particular demonstration was made in front of a fire house with a fire chief and his men as interested spectators.

The demonstrator raised the hood of his car and poured a can of gasoline over the motor. Then he threw a lighted match into the gas. Instantly the whole motor was in a blaze, the flames leaping high in the air.

"Tell them what kind of a fire that is to handle," he suggested to the fire chief.

"There isn't anything meaner to fight than a gasoline fire," the fire chief grinned as he answered.

"All right," said the demonstrator, "Now look!"

He grabbed a large handful of Fire-Choke and hurled it into the blaze with a sweeping motion, then another handful for the other side of the motor, and a couple of little dabs here and there. The fire was completely extinguished in an instant.

"Now start up your motor," said the Fire-Choke man.

The motor ran as perfectly as if nothing had happened.

"How about that stuff, chief? Is it any good?" asked the demonstrator.

The chief, a veteran fire fighter, was gathering up some of the chemical in his hand.

Fire Chief Likes It.

"Well, I'm going to see that it gets on all our chemical engines," he answered. "I never saw anything that worked like that in my life, and I guess I've seen them all. We could use it several times every week

and save the damage which follows when you turn on the chemical. An engine doesn't often start up like that when we get through using a liquid chemical. This stuff is just a harmless powder, isn't it?"

"Perfectly harmless. I'll put it in my mouth if you like, but the pesky stuff doesn't taste very good," the Fire-Choke man answered.

"I'd like to see what it would do on a bigger burning area," suggested the fire chief.

The demonstrator nodded. "All right, chief, stage your own act," he said.

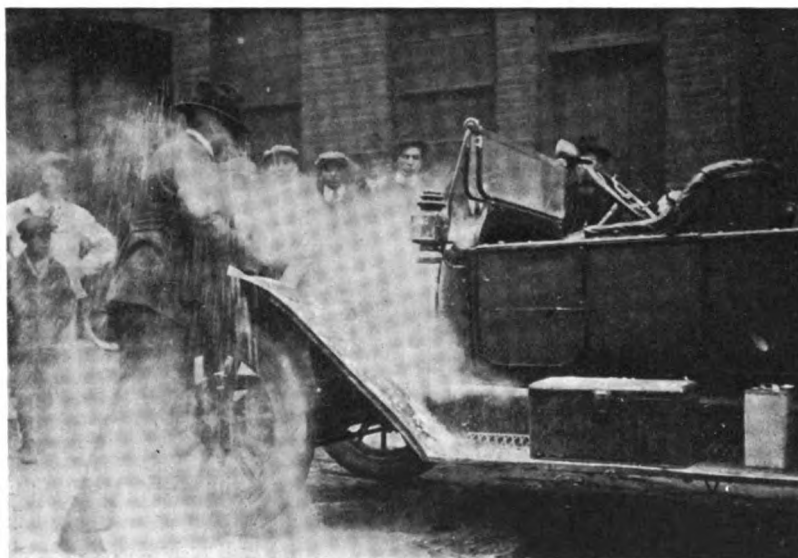
The chief lead the way around to the back of the engine house and sent one of the firemen after a big pail of gasoline with which he thoroughly saturated the

"Hey! Turn it to the left," someone yelled. The fireman took the tip and in a moment a thin stream of liquid was playing on the blaze. It quelled it in spots, but that was all that could be said, for the fire leaped right back again, and when the extinguisher was empty the whole area was still ablaze, only a hotter fire than ever.

"It doesn't seem to work, chief," consoled the Fire-Choke man. "Now watch my stuff."

Flames Are Smothered.

He took a handful of Fire-Choke as before and threw it at the base of the fire with the same sweeping motion. Where it fell the fire died out as if smothered by a blanket. Only a little outer ring was still blazing.



Demonstration of Fire-Choke

ground for an area of about ten feet each way. A strong wind was blowing, and the moment a match was applied a fire of terrific heat was burning all over the area, and constantly gaining force.

"Now, let's see you put that out," grinned the chief.

"How about your liquid hand extinguishers? Would they do it?" asked the Fire-Choke man.

As a safety precaution one of the firemen at the back of the crowd had armed himself with a liquid extinguisher.

"Turn that stuff on it," ordered the chief.

The fireman made frantic efforts to start the extinguisher, but his technique was bad.

"Didn't quite get it all that time," said the demonstrator as he flicked a little Fire-Choke on the blaze that remained, instantly extinguishing it.

"Well, you've convinced me," said the chief. "If it will work like that on gasoline it will do anything that can be expected of a fire extinguisher. You've got a great thing there. I never saw anything like it."

The remarkable action of Fire-Choke is due to its chemical composition, a secret formula. When it comes in contact with heat it instantly forms a blanket of carbon dioxide, which smothers out the fire. While

(Continued on page 52)

New Rules for Labor Recruiting Adopted by National Government

Manufacturers Having More Than 100 Employees Must Obtain Additional Men from United States Bureaus

New rules regulating the employment of unskilled labor have been announced by the United States Employment Service in the Department of Labor at Washington. In his recent statement on the subject Director General J. B. Densmore says "this is probably the most drastic action that the government has taken since putting the National Army draft into effect." He also states "the absolute necessity for this program can be seen when it is realized that in Pittsburgh, for instance, there are advertisements calling for men to go to Detroit; while in Detroit street cars there are posters asking men to go to Pittsburgh. This same condition is apparent all over the United States and in the consequent shifting of labor a great part of our war effort is dissipated."

The announcement is in part as follows:

"On August 1, the supplying of war industries with common labor will be centralized in the U. S. Employment Service of the Department of Labor, and all independent recruiting of common labor by manufacturers having a payroll of more than 100 men will be diverted to the U. S. Employment Service. This is in accordance with the decision of the War Labor Policies Board and approved by the President on June 17. (The War Labor Policies Board is composed of representatives of the War, Navy, and Agricultural Departments, the Shipping Board and the Emergency Fleet Corporation, the War Industries Board, and the Food, Fuel, and Railroad Administrations. Its chairman is Felix Frankfurter, Assistant to the Secretary of Labor.)

"The above action was found necessary to overcome a perilous shortage of unskilled labor in war industries.

This shortage was aggravated by an almost universal practice of labor stealing and poaching.

"While the restrictions against the private employment of labor apply only to common labor at the present time, these restrictions will, as soon as possible, be extended to include skilled labor. In the meantime, recruiting of skilled labor for war production will be subject to federal regulations now being prepared.

Measure is Protective.

"This drastic change in the Nation's labor program has been found necessary in order to protect the employer and the employed, to conserve the labor supply of the communities and to cut down unnecessary and expensive labor turn-over (which, in some cases, is as high as 100 per cent a week), and to increase the production of essentials.

"While non-essential industries will be drawn upon to supply the necessary labor for war work, the withdrawal will be conducted on an equitable basis in order to protect the individual employer as much as possible.

"Under the operating methods adopted, the country has been divided into thirteen federal districts, each district in charge of a superintendent of the U. S. Employment Service. The states within each district are in turn in charge of a state director, who has full control of the service within his state.

"In each community there is being formed a local community labor board, consisting of a representative of the U. S. Employment Service, a representative of employers and a representative of the employed. This board will have jurisdiction over recruiting and distributing labor in its locality.

"A survey of the labor require-

ments is being made, and in order that each community may be fully protected, rulings have been issued that no labor shall be transported out of any community by the U. S. Employment Service without the approval of the state director; nor shall any labor be removed by the service from one state to another without the approval of the U. S. Employment Service at Washington. Every effort will be made to discourage any movements from community to community or state to state by any other service.

"This labor program has the approval of all producing departments of the government, through the War Labor Policies Board.

"It must be understood that farm labor will be protected, for the industrial program distinctly includes special efforts to keep the farmer supplied with labor.

Present Exceptions.

"The requirement that unskilled labor must be recruited through the sole agency of the U. S. Employment Service does not at present apply in the following five cases:

- "1. Labor which is not directly or indirectly solicited.
- "2. Labor for the railroads.
- "3. Farm labor—to be recruited in accordance with existing arrangement with Department of Agriculture.
- "4. Labor for non-war work.
- "5. Labor for establishments whose maximum force does not exceeds one hundred.

"When the survey of labor requirements has been made and the aggregate demand for unskilled labor in war work is found, each state will be assigned a quota, representing the common labor to be drawn from among men engaged in non-essential industries in that state.

(Continued on page 32)

How to Make the Shop Pay

Coupon Books for Various Amounts Selected to Solve Payment Problem for Work at Central Shop

By E. B. HINRICHSSEN.

The details of the central shop were hard to arrange. The dealers took to the idea and were perfectly willing to turn over their forces and equipment in exchange for stock, but an equitable service arrangement was hard to make. It was difficult to estimate just what service each would require and also hard to keep account of the new cars sold.

It was absolutely necessary to arrange a general plan before opening the new place. Both Mr. Brown and Bill knew that the various details incident to a new business would keep them busy and they did not want to be swamped by a change in policy until after they had the business running smoothly.

After many conferences the following scheme was worked out: It has always been a question as to who first thought of it. The various members of the organization give Bill the credit for it, but Bill says that necessity brings out ideas and any way the ice man ought to get the credit as he only stole his idea.

The plan as finally developed was to issue coupon books in amounts of \$10.00, \$25.00, \$50.00 and \$100.00. These books contained coupons of 25 cents value each and these coupons were good in trade at the central shop. They could be used for mechanical work, accessories, supplies or anything else that the station carried.

This at once put the matter of free service up to the dealer. He had to purchase the books from the service station and he had to pay list price. There were no discounts. His credit might be good, but sooner or later he had to pay for the books issued to him. When he sold a car, instead of promising free service, he had to actually give a certain amount, with the car. It could be as much or as little as he saw fit, but in any event it came out of his commission.

The car owner was also careful with his service book. He knew that when it was used up his free service ended—unless he could talk his dealer out of another book—and that he would then have to pay for his work. As to getting another free book—some of the dealers did issue second ones at first, but they soon got over it. They came to realize what this service was costing them.

There was some protest at first about having to pay list price, but it was finally agreed upon when Mr. Brown pointed out that they were all stock holders and would get their discounts in dividends if the venture were successful.

These coupon books became very popular with the car owners as well as with the dealers. They could be used only by the person, or, rather, car to whom they were issued and in case one was lost, the station would void it and issue a new one.

Those owners who employed drivers found them particularly convenient, and it soon came to be the rule to use them. After a few months' business, the cashier said he would not know real money if he saw it.

It simplified credit arrangements. A man's credit was good only for books. He could not have a job charged. If his credit was good he could get service coupons on it. That was all. There was a lot of kicking for a while, but it soon died down and there was no chance of forgetting or misunderstanding an invoice. The exhausted books told the whole story.

While this problem was being settled, the association was also busy finding a suitable building. After looking over all the available ones in the proper locations they decided to build. The plans were to build a three story structure which could be increased to a four story if necessary. On the ground floor would be the accessory and parts departments as well as a small shop for minor repairs, the gasoline and oil filling stations, the cashier's and administration offices, etc. The second floor was for the shop proper and also gave some storage space. The third floor was devoted to storage of cars, parts and other equipment.

Bill held out for ramps from one floor to another, but had to give it up. They could not be put in with the space they had to use. He had to be satisfied with elevators.

In the next article we will give a detailed description of the arrangements and the routine by which business was transacted.

"It's the constant reading of energetic business literature that unknowingly shapes a man's business character."—G. A. Calvert.

Medinah Temple Taken for Big Jobbers' Show

Medinah Temple will be used as a show place for the First Annual Exhibit of Automotive Equipment given by the National Association of Automobile Accessory Jobbers. The show will be conducted from October 28 to November 2, inclusive.

As has been previously announced, the affair will not be open to the public but will be held for the trade only. From October 23 to 26 the exhibitors will be afforded an opportunity of installing the goods they wish to display.

The details of management are to be cared for by Chester I. Campbell, who has managed the very big annual automobile shows at Boston ever since they were inaugurated.

R. H. Spear President of All-American Truck Firm

In keeping with the spirit of the times the All-American Truck Company has conceived the All-American idea, which is the greatest and most thoroughly All-American movement that has ever been inaugurated in the history of motor trucks—a movement that embodies certain principles that are bound to be the future fundamental basis on which trucks will be built and sold. R. H. Spears is head of the concern.

Every development of the business involves the direct application of this splendid patriotic principle. This idea is briefly summarized in President Spears' own words:

"In our modern factory only American citizens are employed. Only parts that are made in America are used in the manufacture of our super-trucks. Our entire sales organization is comprised solely of American representatives, distributors, dealers and salesmen.

"For the period of the war All-American super-trucks are sold for service directly connected with the general war program.

"This plan can be applied with equal success in solving the inter-city haulage problems for the relief of the railroads in short hauls where motor express routes are being established and trucks operated on regular schedules. This form of transportation is rapidly becoming more popular each day, affording better facilities and greater dispatch."

Welding, Cutting and Brazing

Welding Copper and Alloys

BY DAVID BAXTER.

Copper and its alloys, brass and bronze, are in many respects similar to aluminum, requiring the same general treatment in the fitting of the torch and regulating the flame. Copper melts at about 1,930 F. Its capacity for heat is great and it is a good conductor of heat. Normally copper is tough and ductile, but when heated it enters upon a brittle stage at about 1,650 degrees, which continues up to near the melting point. In welding, this brittle stage must be passed. At the brittle stage is where the operator should be careful about handling or moving the casting, because it will crumble easily, or break apart.

Copper has a great affinity for gases and if exposed to the atmosphere when at a white heat will absorb oxygen and become oxidized and brittle. The outer flame of the torch absorbs oxygen, therefore it may be used to prevent the old metal in the job, and the new metal in the filler, from being oxidized by contact with the air.

Bronze, a quite common alloy, is readily welded, due to the fact that tin in the alloy is not altered by the high temperature of the flame. A bronze filler makes a good material to fuse bronze with.

With other alloys than bronze, care must be taken to prevent volatilization of the zinc in the composition. Use a filling rod with a higher per cent of zinc to replace any lost from the casting in the process of welding.

If it is a copper alloy casting to be welded, employ nearly the same methods of preparing and preheating as you would use on aluminum, and for the same reasons. On sheet copper the proceeding is almost the same as on sheet iron or mild steel.

The flame used on copper alloys is adjusted with a slight excess of acetylene; this is to reduce the temperature of the flame. It also gives the flame more protective power; and we have less oxygen in the flame to contend with. It is the oxygen of the air and of the torch that oxidizes the melting metal; this is why we reduce the oxygen in the flame.

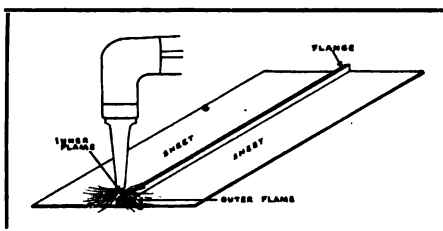
The mixture of the gases at the tip, even when the flame is neutral, supplies only a slight excess of oxygen above that for the burning of the carbon to carbon-monoxide; most of the oxygen needed to burn the hydrogen and monoxide is taken from the air. Therefore the outer flame of the torch is an active agent that materially aids in preventing the air from injuring the copper.

We should manipulate the outer flame in

a way to make the most of its deoxidizing power. To do this we should hold the torch so the outer flame will spread over the entire surface of the white hot metals; holding the tip vertical attains the purpose.

If it is sheet metal we are to weld, the preheating by other agents than the torch is usually unnecessary. We still have expansion and contraction to deal with, although in a seemingly different form. The contraction works along the weld, tending to pull the sheets together faster than we can weld. The welded part is cooling and contracting all the time we are welding. The remedy is to spread the sheets apart at one end, opposite from the starting point; the same as is done on sheet iron work.

If the copper is an eighth of an inch or



Method of Spreading Outer Flame on Both Sides of Flange in Welding Sheet Copper

less in thickness, it is well to flange or up-bend the two edges of the weld. Bend them up the thickness of the metal. We can then weld the seam, by using the up-bend as a filler, melting it down flat as we go along. Hold the torch vertical so the outer flame will spread on both sides of the flange. On sheet work use a slight excess of acetylene.

Both for thin sheets and castings, or heavy sheets, a requirement is to work rapidly and steadily, always keeping the flame in motion. A slight "painting" motion, steadily onward, is thought better by some operators. Above all we must not allow the white or inner cone of flame to touch the melting metal.

On copper work where it is necessary to use a filler, we choose one considerably smaller than we are accustomed to use for the same thickness of other metals; this is to aid the execution of the welding. We might ruin the body of the weld while trying to melt in a heavy copper filler.

The flux used on copper alloys is intended to prevent oxidizing, therefore we should pick a flux that has an affinity for oxygen. This flux may come in powder, or stick form, or the form of paste that is painted along the weld before operations are commenced. The fluxes are applied the same as described in other articles.

While we may use the hot finishing process mentioned previously on copper alloys, we should do it with the flame alone,

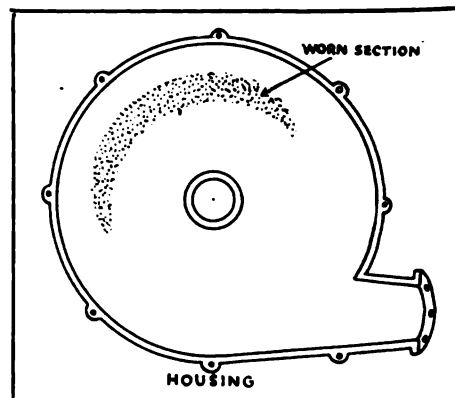
as this metal does not stand hammering; the melted metal may be blown or "painted" into better shape with the flame, but even this is risky business, even for experts, due to the great danger of burning the alloy.

Cooling copper is not such a particular proceeding as with iron, steel, etc.; in fact, it may be cooled rapidly by quenching in water; it is said to toughen and soften copper to immerse it in water while still red hot. Alloy castings should not be thus treated, unless their shape permits.

As with all jobs of welding, the copper alloy welds should be given a presentable appearance by filing, or grinding, after the work is cold. This is good advertising if nothing else. Now an example of welding copper alloy:

Welding Copper Alloy

The job was a brass or bronze pump housing, weighing about 200 pounds, and the impeller, weighing about 50 pounds. The metal was one-half inch in the housing and three-quarter inch in the other part. The housing was worn thin and clear through about half the distance around the housing, due to the rubbing of the impeller, which had been slightly out



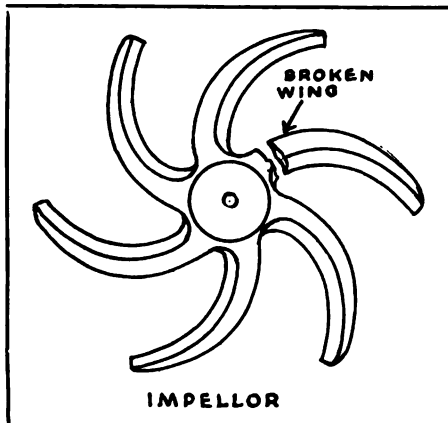
of line. The impeller had one wing broken off two inches from the hub.

This pump had been used for pumping salt brine, therefore the broken parts required considerable cleaning of the place to be welded. The cleaning was accomplished with a steel scraper and files; the surface was scraped clean and bright, thoroughly exposing the naked metal. The hub and broken wing were tapered to form the welding groove. This grooving was done with a chisel on the hub and a hack saw on the wing.

The housing could not be grooved; this proved to be quite a problem as will be explained later.

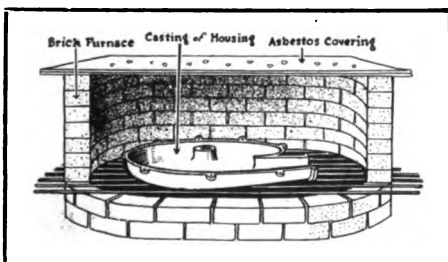
The welding on the housing was done in a makeshift furnace, constructed of brick, built loosely into a circular wall, about eighteen inches high. About half an inch

of space was allowed between the bricks to furnish draught for the preheating fire. A grating of flat rods was laid on top of the second course of brick. A fire of charcoal was kindled and the housing was placed upside down on it. The whole was then covered with asbestos paper, to concentrate the heat. Holes were punched through the paper to permit air to reach the fire. While the casting was heating the torch, tips, filler, flux, tools, etc., were selected and placed in readiness.



On account of a heavy hub in the center, the thin web and the heavy rim, there was some danger of cracking from unequal expansion and contraction. The preheating was carried up to a red-heat, all over the casting, before the welding flame was applied. This heat was maintained throughout the welding. It was necessary at intervals to enliven the fire with air from a small hand bellows.

The welding flame was regulated to carry a slight excess of acetylene. The weld was started and the flame was kept in motion all the time. A zig-zag-arc motion was employed, to prevent oxidation, and to heat as large an area as could be welded successfully. A dipping motion was also incorporated, on the thin parts of the casting. In other words, the torch was drawn back from the weld and then immediately lowered again; this was to insure against melting through the casting.



Housing Walled in With Brick
Demonstration of Fire-Choke

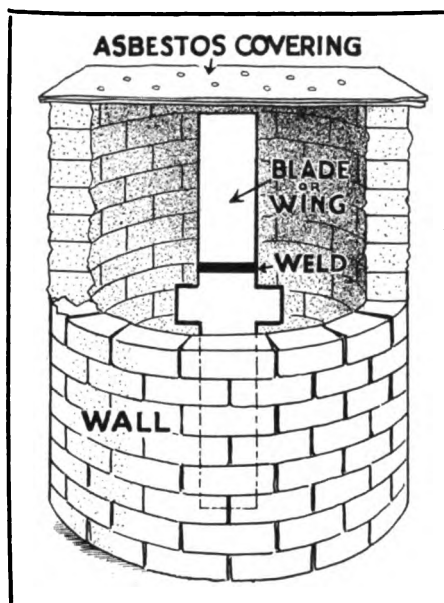
For the torch used on this particular job, a No. 8 tip was selected, one having a five thirty-second hole through it. Such a large tip was required to furnish a greater amount of heat without increasing the temperature and pressure of the flame; greater

heat permitted faster work, without endangering the metal. Speed is a large item in thin work.

A quarter-inch rod of Tobin bronze was used as a filler. The filler was kept continually in the bath of melted metal; it was held in touch with the melting part of the weld. At no time was the melting filler allowed to drip onto the weld. If this is permitted, the drop of metal may become oxidized while passing through the air, or through the welding flame. Also, the drop will cool or set, enough, even in dropping an inch, to render it so cold it will not mix or fuse with the weld. For these reasons the end of the filler was kept melting in connection with the melting weld.

A common grade of borax was used for flux, to cut the slag, and to float it to the surface. A helper was near to scrape away the slag with spatula or skimmer as fast as it came to the top of the molten metal.

The welding was started about midway of the worn section, and built on to a thickness sufficient to add stock for machining; the metal from the filler was added around the housing to this end of the thin section. The welding was then recommenced at the center and worked in the other direction. By doing this, we cut in half the amount of contraction happening at one time.



Preheating Oven for Impeller and Cross Section of Impeller

As soon as the inside was completed, the housing was uncovered and quickly turned over on the fire. The little deficiencies were then welded smooth on the outside of the housing.

The total weld was accomplished by working through openings in the asbestos cover-paper without entirely removing the paper. This served a secondary duty of protecting the operator, who wore cotton gloves.

No attempt was made to hot finish this weld. It could not be hammered through danger of breaking, and it was decided

useless to attempt to do any hot finishing with the flame—too much risk for the time it might save.

After the welding process was complete, the fire was enlivened to even up the heated surface. This reheating was for the purpose of making certain there would be no unequal contraction that might result in a cracked casting. The whole thing, furnace and all, was then covered with several layers of asbestos and allowed to cool as slowly as possible; the cooling required about ten hours to complete.

After the casting had cooled, the most of the roughness and excess metal was ground off with a flat emery wheel. The inside was turned off on a lathe, leaving the housing almost as good as a new casting. The job took two and one-half hours time and 40 feet of each kind of gas.

The welding of the impeller was simple compared to the housing. About the most troublesome feature was the lack of working room in which to manipulate the torch. This was partly overcome by employing a small torch fitted with a short tip. The blade section was held in place with a portable vise arrangement.

The filler and flux were the same as on the other job. The groove was melted full of filler metal, thoroughly fused with the edges of the groove. On top of this was piled about half an inch of extra metal thoroughly mixed in, and rounded over to the casting. This gave added strength and a better appearance to the seam. The impeller was not preheated so much as the housing, because the expansion and contraction was partly taken care of by the shape of the casting—there was nothing to retard the expansion and contraction because one end of the blade was loose.

A little thought on the different phases of these two jobs should enable the beginner to plan ways and means of welding other jobs. These jobs embody most of the difficulties met with on the repairing of copper alloy castings.

Signal Problem Puzzles.

Serious consideration is being given by several of America's leading cities to the question of collisions and their cause. Problems which will lead to the prevention of such unfortunate occurrences are being worked upon by many prominent men. Hand signals have been strongly advised, but K. G. Barkoot, distributor for the Roedding signal tail-light throughout the United States, has received advices from cities where hand signaling has been officially tested that the plan has failed due to the fact that so many cars are of the permanent roof top variety with sides while so many motorists operate with their tops up constantly making hand signals inoperative through the inability of the driver behind to see the hand. Some cities now have ordinances about to be introduced enforcing the use of signal taillights.

Definite Information a Requisite for Success in All Business Lines

Accountant Should be Engaged to Start Set of Books from Daily Records of Work Done

This is the concluding installment of the advice on bookkeeping, the first part of which was printed in the July number of this journal.

The article was written by O. R. McDonald in a book entitled "My Way of Running a Garage Business," that was issued for free distribution by the Assisting-the-Trade Committee, National Association of Automobile Accessory Jobbers.

In other words, there is nothing that makes more for greater success in business than definite information, and definite information may be had in all lines of business.

The following pages show the four sides of the two shop tickets I would use and the receiving slip and shop requisition. This receiving slip is simply to make a list of goods received into stock, without reference to the invoice from the jobber or manufacturer. In doing this, the one who receives the goods is entirely unhampered and can only list the goods he actually receives, whereas if he were checking from the invoice he might check items that were on the invoice, but were not in the goods received. When this receiving slip is issued against the original invoice we will know absolutely whether we got the goods or not.

Using this shop ticket, we have a rec-

ord in the office of just what material was used on the job, because in order to get any material to use on the job it is necessary for the shop foreman to make a requisition and send it in for the material and this requisition is recorded on the shop ticket. In this way nothing gets out of stock and onto the car without being charged.

Front of work ticket.

Much stock in the small garages is put on cars and forgotten, no charge being made for it. I had this forcibly brought to my mind not long ago. One morning, when I was in a town of about 5,000 inhabitants, a man came in and wanted a stove bolt with a lock nut on it. The shop was in the basement. The floor

boy went to the basement and hunted around about ten or fifteen minutes, found a stove bolt, came up to the stock

Back of work ticket.

room, got a lock nut for it, and handed it to the customer and said, "Oh, that's all right." As a matter of fact there was about 25 cents in material and labor involved in that transaction and he had given that fellow 25 cents which was the interest on a \$5.00 bill for a year, and which his employer could not afford to give away.

BOOK RECORD.

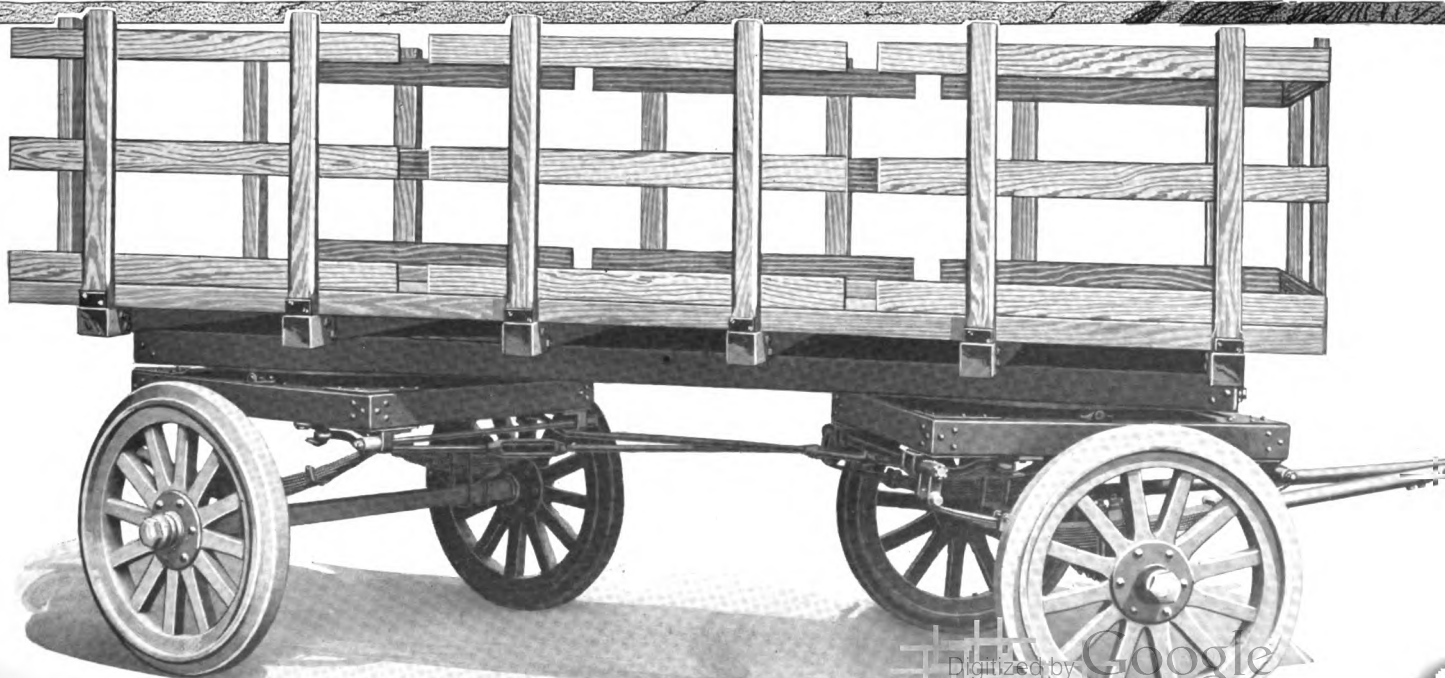
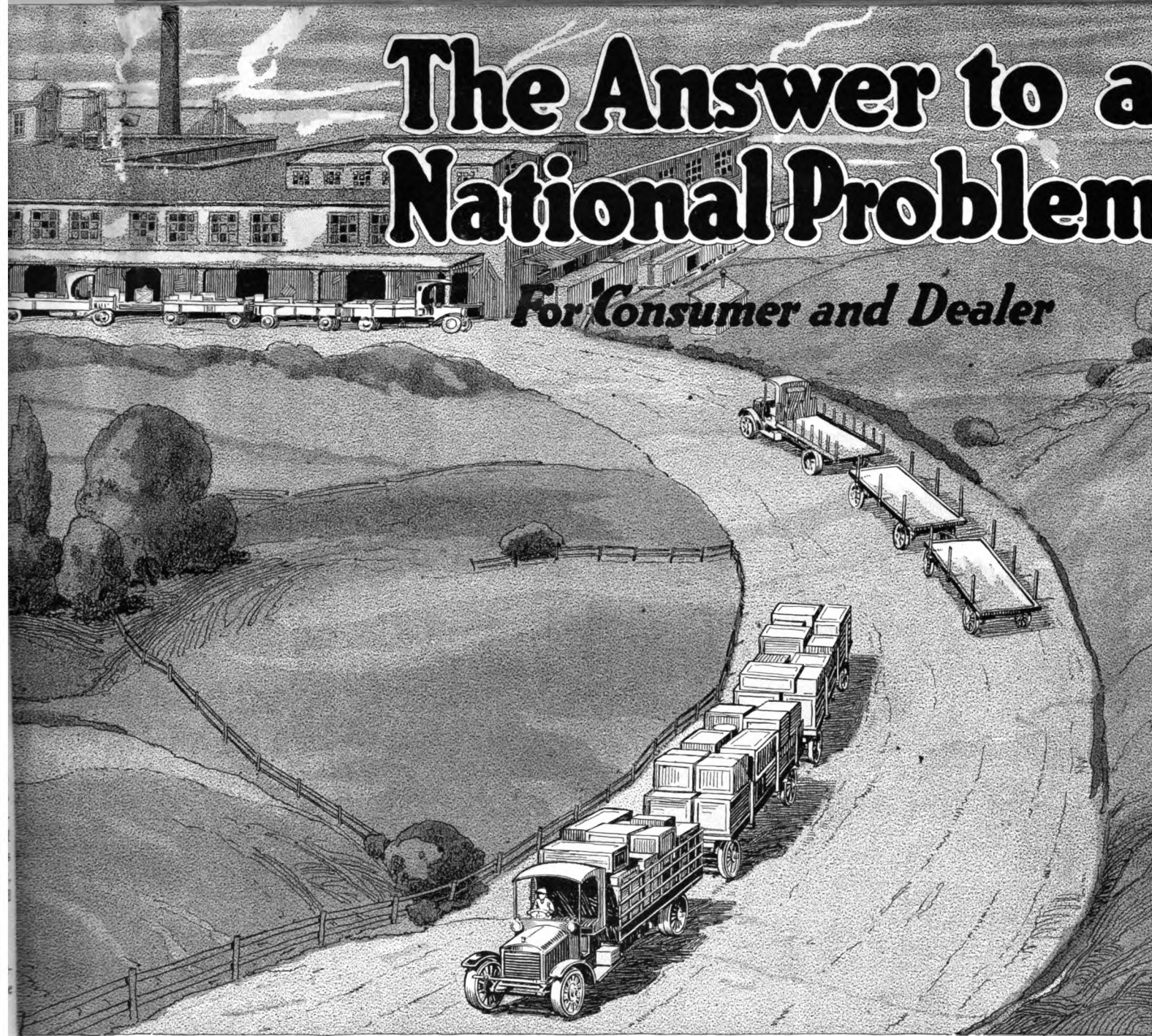
Now, after having installed these preliminary records it is necessary to have
(Continued on page 50)

Front of shop order.

Back of shop order.

The Answer to a National Problem

For Consumer and Dealer



REDDEN TRAILER is the answer to the transportation problem. One motor truck can pull both loads.

The trailer can be loaded and unloaded while the truck is making other deliveries.

The trailer can be handled by the same men who handle the truck.

The trailer helps conserve gasoline and oil.

The trailer requires no special care.

The Redden Trailer is two-ton capacity, steers and tracks perfectly and, in every sense of the word, performs the dual purposes of a truck and the saving of expenses in its operation.

Business with big hauling to do is finding it more profitable and efficient to have less trucks and more trailers. The trailer that stands out conspicuously for dependability, durability and value is the

REDDEN TRAILER

Tracks Perfectly

Firms that started with one trailer now have fleets of trailers. Trailers cut hauling costs from 50% to 75%! This is how they accomplish it.

As hauling increases, they do not buy more trucks—but more trailers.

This not only dispenses with the wages of drivers and help, but reduces maintenance costs—gasoline, oil, repairs, adjustments, etc. It also means that where the trucks were idle for hours waiting to be loaded and unloaded—they are now in continual service! It saves insurance.

While several trailers are being loaded, others are on their way. While these are being unloaded at their destination, the trucks pick up the unloaded trailers and come back for trailers that have been loaded at the factory in the meantime.

Every man with a truck is a Redden trailer prospect.

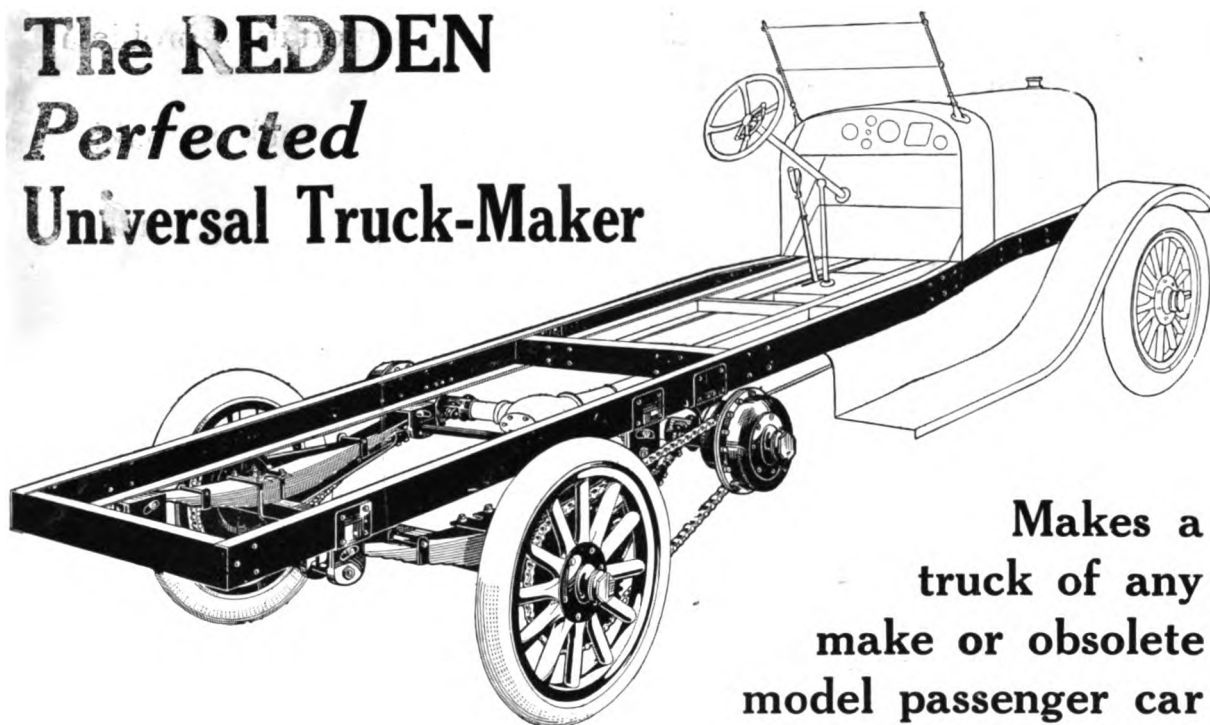
Dealers thruout the country know the Redden Motor Truck Company and their square deal business methods. Their products, including the trailer, will stand the acid test of competent, impartial examination from every utility and mechanical view point.

EXCLUSIVE WANTED FEATURES

It has other powerful selling features that over-tower those of any other trailer.

The front and rear wheels track perfectly forward or backward—a wonderful advantage in turning corners.

The REDDEN Perfected Universal Truck-Maker



Makes a
truck of any
make or obsolete
model passenger car

REDDEN PERFECTED UNIVERSAL is the answer to the great demand for converting out-of-date and unsaleable passenger cars into light delivery trucks.

Here is the only *Perfected* truck-maker on the market that will fit any make or obsolete model passenger car easily and quickly. Any man can attach it himself in a barn.

No machine shop needed; no milling; no machinery; no expert mechanic wanted. The only tools needed are—hammer,

hack saw, cold chisel and drill. No matter what type of axle the car has—semi-floating, three-quarter floating, seven-eighths floating, or full floating—this Redden *Perfected* Universal Attachment fits perfectly.

Three-fourths of a truck is in your territory!

This, together with the price of the attachment, offers a saving of hundreds of dollars on a truck that will do as good or better work as a built-up truck of same capacity, and helps Uncle Sam by saving freight car space.



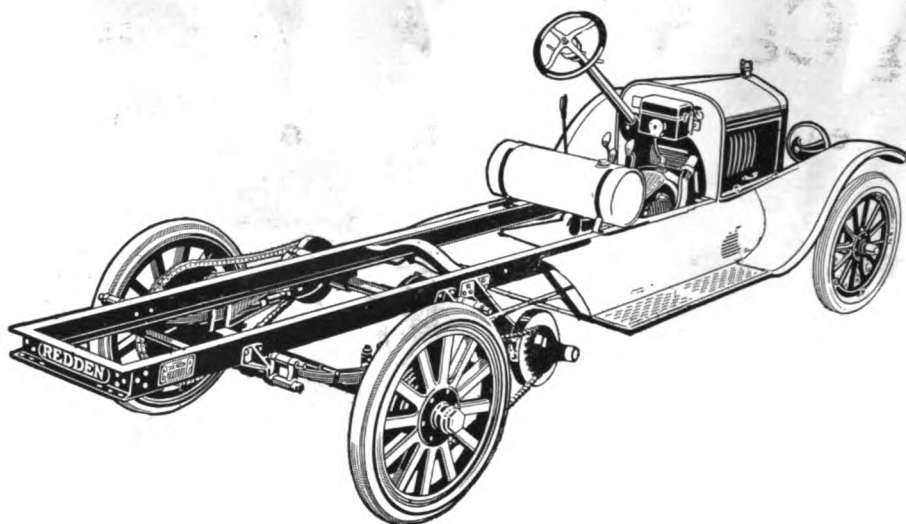
View showing the Redden Perfected Universal Truck-maker attached to an old car. Note that the weight is on the rear axle! This car was converted into a truck at no expense save the attachment.



View showing the almost impassable roads over which a truck made from a Redden Perfected Universal Truck-maker negotiated without fear of breakage. It's made for real hard service.



The driver of this truck, made with the Redden Universal Truck-maker, was warned not to travel over this road on account of bad condition—but it came through fine, carrying a heavy load.



The REDDEN ATTACHMENT

For making Fords into trucks

Over 3,000 business houses are using trucks made from the Redden Ford Attachment.

Among them are Armour & Company, Packers; Francis H. Leggett & Company, Foods; Ward Baking Company; Coca Cola; Barrett Manufacturing Company, Roofing; Great Western Oil Company; Detroit City Gas Company.

One great Canadian department store has a fleet of 28 Reddens.

For farmers, transfer and storage businesses, merchants, teaming, lumber yards, coal dealers, mines, provisioners, manufacturers, factories, the Redden Attachment for Ford Cars offers almost unlimited sales possibilities.

Message to Dealers

You are wondering how to fill the gap in sales because you are not getting your full allotment in passenger cars.

Hitch up to the Redden Line.

Every man who has any hauling to do is a prospect for either the Redden *Perfected* Universal Truck-Maker or the Redden Ford Attachment. Every man with a truck is an almost sure prospect for a Redden Trailer.

Immediate Deliveries

We are in a position to make immediate deliveries for the Redden Complete Line. Get in on this proposition and secure your territory now. Our proposition to you is very

attractive and a square deal one. National Advertising is making a gigantic smash with this Redden startling war-time transportation development.

REDDEN MOTOR TRUCK COMPANY, Inc.

2337 South Michigan Avenue, Chicago, Illinois, U. S. A.

NEW YORK OFFICE
Redden Motor Truck Co., Inc.
224 West 57th Street
New York City

PACIFIC COAST
Redden Pacific Co.
1608 L. C. Smith Bldg.
Seattle, Wash.

WESTERN CANADA
Western Canada Auto Tractor Co., Ltd.
315 Hammond Bldg.
Moose Jaw, Sask.

Wire or Write — or come to Chicago

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Syracuse Woman Aids Sales Work Of Big Cash Register Organization

Uses Points Learned During Convention at Dayton Plant to Increase Business of Agency



Mrs. Sager Holding Meeting of Salesmen

Women have for a long time been regarded with great favor in a business way by President John H. Patterson of the National Cash Register Company at Dayton, Ohio. Mr. Patterson, who has been styled the greatest trainer of salesmen in the world, gave convincing proof of his belief in women's influence on sales work when he called a convention of wives and female relatives of his salesmen at his plant last October.

Noted speakers—both men and women—made addresses on various business topics at the gathering in the big Dayton plant. Mr. Patterson and his sales experts also talked to their fair auditors on the most approved methods of getting the names of prospects and then turning these prospects into pleased purchasers.

Mrs. C. A. Sager of Syracuse was one of the most interested delegates at the women's convention. It is said in the N C R organization that she has always been a most efficient helper in getting business for the Syracuse agency but she was more enthusiastic and better informed on selling tactics than ever before when she returned from the Dayton meeting.

Some time after she returned to her home city Mrs. Sager organized a con-

Mrs. Sager's Sales Rules.

1. When interviewing a merchant, smile. It pays to look pleasant.
2. If you can't get a satisfactory interview with a merchant at first, always leave an opening so you can go back.
3. Try to avoid arguments. There is no money in argument. It is time wasted.
4. Don't discuss politics with your merchant. Invariably it makes enemies.
5. Be loyal to your predecessor by trying, in every conceivable way, to make his business stick.
6. Canvass your territory thoroughly.
7. Cultivate the merchant's friendship in your territory by calling to see if you can be of any service. Many times you will get some good pointers by doing so.
8. Try to help your brother agents, regardless of where they are located.
9. Don't get discouraged. Holding on is often the last key that opens the lock.
10. In trying to secure an order, never make any promises that you cannot fulfill. By doing so you lose the merchant's confidence and friendship.

vention of her own. She gathered the men of the Syracuse agency together and told them some of the things she had learned at Dayton. She laid particular emphasis upon ten helpful points

—every one of which applies to the sale of automobiles, trucks, tractors, truck units, trailers, tires and automotive accessories as it does to cash registers—which are given herewith:

Miller Firm Helps Train Army's Tire Repair Men

One of the most interesting and important phases of military activity in and around Akron, Ohio, the rubber tire center of the world, are the United States Army tire repair schools where the young soldiers are given careful instruction in the building and repairing of casings and tubes.

In the case of the Miller Rubber Company, where Miller geared-to-the-road tires are manufactured, the class is conducted in the large service station across the street from the factory. Each month a class of enlisted men puts in four weeks of diligent work in an effort to master the mysteries of tire construction. There are six hours of work each day. The detachment is under command of Captain A. E. Aub and is quartered, when not in the class room, in barracks on the campus of Akron University.

When the four weeks of tire study have been concluded, each man must pass an examination of 29 questions concerning tire building and repairing. He is then graded accordingly to his proficiency, as shown by his answers to the examination questions. That the young soldiers are unusually good students is indicated by the average standing of the class of June. There were 107 men taking the course at various plants in Akron and the average grade was 90 per cent.

In the Miller school, and the same situation prevails elsewhere, tire men of long experience are instructors for the soldier-students. The Miller students are never allowed to handle customers' tires, although when they finish their course it is said that they are perfectly qualified to do so.

When the enlisted men first enter the class they are confronted with a huge pile of old tires of every variety—cord, molded, wrapped and so on. There are also innumerable tires for their inspection and study. After two or three lectures, the men begin to tear apart the tubes and casings and learn what they are made of. Then comes the actual repair work.

An aged casing, that has been skillfully repaired until it will again render service, is subjected to terrible abuse until the average layman would pronounce it fit for nothing but the scrap pile. This casing is turned over to a couple of students and they are told to repair it so it can be used again. The results are often so remarkably well attained that they are amazing.

Of such men is the U. S. Army's tire repair department composed.

Wife Takes Husband's Job.

Mrs. Beulah Brede is now performing the duties of assistant secretary of the De-

troit Section, Society of Automotive Engineers. She has been doing the work since her husband, O. M. Brede, left to join the colors.

Woman Agency Manager Sells to Both Sexes

Mrs. J. C. May, who manages the National Olympian Motor Sales Company, Augusta, Ga., started in business to sell automobiles to women. It was her idea, she announced, that it takes a woman to know what the other women want. She was right, for she found that the women of Augusta came to her for automobile advice. But she found also that the men preferred her salesmanship and they, too, came to her to buy cars. She has been in the business a year and here is what she writes:



Mrs. J. C. May

"I am enthusiastic over the automobile business. First of all, I have driven motor cars for years and have enjoyed it. There is no pleasure in life as great as driving a good-looking car across the country. Motoring ought to be a woman's favorite pastime. It entirely eliminates what some women call 'nerves.' I believe in the Olympian car. It is one of the best looking cars that ever came into Augusta. It appeals to the owner of the big high-priced car and also to the man and woman of medium means."

In the past three months Mrs. May has sold fifty Olympian cars. She is shown at the wheel of her demonstrator.

Women Drivers Release Men for War Service

To release skilled mechanics for other work and thus give some help in the war, there are seven girls at the Saxon Motor Car Corporation plant at Detroit whose daily tasks consist in driving newly finished cars from the factory to the shipping dock.

And the girls won't trade jobs now for any of the purely feminine pursuits. They get greasy and dirty—they have had to throw away chamomis and powder puffs be-

cause they are futile—but still they like the job and they all say they would not trade it for a place at the kitchen sink or on the firing end of a sewing machine.

"It's a much better job than being a department store detective," says Mrs. Lotta Dupuis, who formerly tripped shoplifters and sneak thieves in a store. "Of course it isn't so dressy but it's healthier and I like it better. Also I can make more money for the support of my three kiddies."

Mrs. Wanda Ludeman backs up Mrs. Dupuis. She formerly was a government operative in rounding up violators of the Harrison anti-narcotic law. "I took the job because I wanted to help the government, and every woman who does a man's work releases a man for the firing line," said Mrs. Ludeman.

The other girl motor drivers are Miss Asa Alvis, Miss Addie Murphy, Miss Regina Anikowski, Miss Verna Otto, and Miss Florence Hill.

Liberty Dealer Publishes a Monthly House Organ

Automobile advertising on the Pacific Coast was treated to an innovation when the month of June brought forth the introductory issue of "Motor Way," a new and unique house publication. It is employed to further the interests of the F. J. Linz Motor Co., distributor of the Liberty Six in the San Francisco territory.

Printed in magazine form, the paper is filled with information of value to owners of Liberty and National cars, both of which are represented by this company. And in addition is presents in a delightfully entertaining manner, accompanied by profuse illustrations, particulars concerning interesting tours throughout California.

The publication is capably edited by R. R. l'Hommedieu, who has long been connected with motor car advertising on the west coast. His initial issue won flattering comments from San Francisco newspapers.


(Continued from page 26)

one cent and looking forward to the future—considering the increase in your volume of business and consequent greater profits—is there any reason at all why you should not take advantage of it?

"The Amazon Agency is a winner, and the dealer who plans for the future will find it a tangible asset."

A picture of one of the attractive window displays arranged by the Amazon concern for use by its dealers, who receive all the necessary decorations at no expense, is shown in connection with this article.

Install a Curtis Air Compressor



The Curtis Sign

Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.

Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.
1515 Kienlen Ave., St. Louis, Mo.
Branch Office—530-U Hudson Terminal, New York City

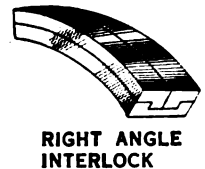




Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

Ever-Tyte Bill *Says:-*

"We wise guys around a shop are just like other humans and when we fall, we falls hard and at that we don't belong to 'The Easy-Men's Club.' You know we are havin' new-fangled contraptions for gas wagons stuck under our noses all the time and many times we've fell for bad dope—then along comes a guy with somethin' that's real, and we, just after being stung, turn up our noses. That goes particularly for piston rings—but at last comes a real honest-to-goodness piston ring. I'm tellin' you somethin'—its name; EVER-TYTE."



The EVER TIGHT PISTON RING Co.
1609 KINGSLAND AVE. SAINT LOUIS

In the Truck and Trailer Field

Trucks Carry Used Cars to Be Sold in Richmond

Drivers Take Vehicles from Newark to City Where Demand for Them Is Great

Recently a fleet of motor trucks en route from the factory at Newark, N. J., to Richmond, Va., passed through Wilmington, Del., in charge of four young men, employes of a Richmond dealer. On board three of the trucks were three used automobiles. This method of transporting new motor trucks presented no unusual spectacle as, since the railroads became congested with freight, it has been a common practice to deliver them to destination under their own power.

The character of the freight, however, caused a natural curiosity, which was sat-

isfied by a talk with the young men in charge.

It seems that in the South, even more than in other parts of the country, the used car is at a premium this year. The large curtailment of passenger car production, transportation difficulties, the national policy of conservation and the necessity of individual economy have all combined to continue the old car in active service and created a large demand for it, especially in the South where large numbers of planters and others now have surplus funds to avail themselves of the convenience of automobiles they have long needed.

The Richmond young men, knowing conditions at home, purchased the three used cars in Newark. Transportation to Richmond cost nothing as the trucks were available for the purpose. The young speculators intend to overhaul the cars, re-upholster and paint them and put on new

tops and will undoubtedly reap a handsome profit on the investment.

Here is an idea which can be adopted by many car dealers to good advantage. With every consignment of trucks they can utilize haulage facilities, which would otherwise be wasted, to transport used cars from the large centers of population to smaller communities, where they can be sold at a substantial advance, especially if they are renovated and repaired to look like new.

The photograph, from which the accompanying cut was made, was taken in



Taking Used Cars Away on Trucks

front of the court house at Wilmington, Del. It shows the old cars loaded on the

front of the court house at Wilmington, Del. It shows the old cars loaded on the

trucks and the young exploiters of a new idea.

ARMY ADOPTS

TRUCK SLOGAN

"Save a Freight Car for Uncle Sam," the slogan originated by the Packard Motor Car Co. as the battle-cry of its \$5,000 truck efficiency test, soon will appear on thousands of trucks now in army service. Fifty sets of stencils have been ordered by the army for immediate shipment to Camp Holabird, near Baltimore, Md. There, hundreds of trucks of many makes are assembled for shipment to France. The slogan will be stenciled on the radiator fronts of the trucks.

Motor Truck Movements.

Frank E. Wing, one of the old timers of Boston's automobile retailers and who has distributed the Marmon for a long time, has joined the ranks of motor truck sellers, having taken on the Hurlburt line.

* *

Acason trucks are to be handled in Baltimore by the Central Automobile Co., President H. D. Caplan having recently made a contract with H. A. Conlon, sales director of the Acason concern.

* *

Stockholders of the Transport Truck Co., recently organized at Mt. Pleasant, Mich., by Milton A. Holmes, have elected a board of directors. Its members are H. E. Chatterton, A. E. Gorham, C. E. Hagan, W. D. Hood, E. J. McCall, David Warner and Mr. Holmes. The business of the concern will be managed by an executive committee consisting of Messrs. Gorham, Chatterton and Holmes and the departmental heads, thus giving to the company a commission form of government.

A Vital War Measure Make Use of Our Highways, Conserve Steel, and Relieve Transportation Facilities in a Big and Practical Way

TO BUILD 50,000 steel freight cars and 1,250 locomotives, takes approximately 1,437,000 tons of steel.

It takes only 300,000 tons of steel to build 200,000 motor trucks with equal ton mile freight-carrying capacity. This is a saving of over 1,100,000 tons of steel.

By using the highways, in addition to relieving railways of a portion of their freight, tremendous terminal expenses and congestion are saved, as well as the cost of transferring to and from terminals. Motor trucks over highways carry merchandise direct from shipper to consignee.

Greater use of our highways is imperative.

Advertisement of The Autocar Company, Ardmore, Pa., in newspapers.

Do You Want To Be This Man?

Western Electric POWER and LIGHT



Let the Western Electric man show you the kind of plant you need

THERE is as much difference in electric light plants as there is in automobiles or gas engines. No one type is equally suited to all farms, and your power and light requirements may be different from your neighbors'.

Like every farmer, you want electric power and light, but you don't want an outfit either too large or too small for your needs. Start right! Get all the facts! Let the Western Electric man show you the kind of plant you need!

Our business is bigger than the mere selling of any particular electric plant. We sell electricity for the farm. There are all sizes and types of Western Electric outfits. We are not forced by policy to sell one type for every purpose. We can sell you an outfit with or without a gas engine.

If you have a gas engine, it may be a needless expense to buy another engine as a part of an outfit. On the other hand, if you want an outfit with built-in engine, the Western Electric man will tell you about a new outfit of this type ready for delivery this Fall. In any case, it is just a matter of fitting our equipments to your needs.

More than forty years of electrical manufacturing experience is back of all these Western Electric Power and Light Outfits.

Make your entire equipment "Western Electric." You can get Western Electric Motors, Water Systems, Milking Machines, etc., to save labor on the farm; as well as Irons, Vacuum Cleaners, Washing Machines and other electrical helps to save time and labor in the home.

There is a Western Electric man near you. Mail the coupon for Booklet No. _____, and we will tell him to get in touch with you.

WESTERN ELECTRIC COMPANY
INCORPORATED
500 South Clinton Street, Chicago, Ill.
114 Third Street, Minneapolis, Minn.

WESTERN ELECTRIC CO., Inc.
I want to know more about your electric plants, so please send your book No. _____ "Power and Light."

Name _____ State _____
P. O. Address _____
County _____

This advertisement will be in Country Gentleman on August 31st, and in 23 other farm papers.

Mail the coupon—if you want to be the man →

Western Electric Company 191

195 Broadway, N. Y. City

Dept. 721

Kindly let me know more about the Power and Light sales agency proposition.

A. G. A. D. Aug.

Mechanical and Engineering Problems

Fitting Radius Rods

Question: I have an old car—name not known—that has had a lot of trouble with the rear axle. I claim that it is because there is nothing to hold it in place. There are no radius or torque rods. The drive is all on the springs and they slip sometimes. I have spoiled a lot of gears and my brakes are never right. Do you think that if I put on torque rods it would help any and what size and where should I fasten them? I have to have new gears made and they are expensive.—J. C., Illinois.

Answer: Radius rods would no doubt help you. They should be fastened on the rear axle at or near the spring tables and should run to the frame at about the center of the car. They should be terminated in brackets at both ends, so arranged that they will be free to move up and down as the rear springs act. They should also be adjustable. The turnbuckle idea is best. I cannot tell you just what size to use without knowing more of the car. Any good parts manufacturer should be able to supply them.

* * *

Oiling Springs

Question: I have seen some advertisements for oil that claim that if the oil is put on the edges of the spring leaves, it will work in and be as good as putting it between the leaves. I have tried it but don't seem to get results. Have you ever tried it? If so, did it work for you?—F. & G., Indiana.

Answer: I have never tried it. I still stick to the scheme of spreading the leaves apart and putting in graphite and grease. Perhaps some of our readers have had better luck.

* * *

Magneto Trouble

Question: We have a few cars equipped with N. V. 4 Bosch magnetos and are having a lot of trouble with them. I always thought this make of magneto was the best. Can you give us an idea as to what causes the trouble?—Auto Co., Mich.

Answer: I think that some of these magnetos were put out without any safety gap in them. They do very well unless a spark plug wire breaks off or something of that kind, and they then burn the winding. I understand that not many of them were put out and that the Bosch people have discontinued them. If you will send any of them that are

The mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and consulting engineer with the Western Electric Co. He is now service manager for the Chicago Republic Truck Co. When shop information is desired, write Mr. Hinrichsen, care this office.

giving trouble to the nearest Bosch agent, I think he will fix them up so you will get better results.

War Tax on Horsepower, Not Car's Original Cost

What final form of taxing the motor car owner will be decided upon by Congress, it is not possible as yet to predict. All revenue measures originate in the House of Representatives and then go to the Senate, which may disagree radically with the House's interpretation of the situation. Then the measures passed by the two branches go to the conferees.

President David Jameson of the American Automobile Association recently presented to the two committees the case of the car owner in communications to Chairman Kitchin of the House Ways and Means Committee and to Chairman Simmons of the Senate Finance Committee.

Mr. Jameson commented upon the fact that the motorist now receives extensive taxation attention from the several states, referred to the certainty that any impost on new cars would be passed along to the consumer, and contended that any charge on the original cost of used cars would be manifestly unjust. Mr. Jameson asserted that it would be as fair to tax coal as gasoline, since both are fuel-producing quantities.

Several days after the filing of Mr. Jameson's communication the House Committee announced that it had decided to base the Federal tax on cars in use on a horsepower basis instead of on the original cost.

Holcomb Heads Williams Foundry and Machine Co.

At the annual meeting of the Williams Foundry & Machine Co., held July 8, the following officers were elected: President and general manager, F. E. Holcomb; vice-president, S. F. Ziliox; secretary and treasurer, William Leary. These officers repre-

sent the new interests who purchased control last fall, reorganized the company and have greatly increased its manufacturing facilities and volume of business.

Among the new additions to the plant is a large three-story brick building, each floor 275x40 feet, devoted exclusively to the manufacture of Akron-Williams tire repair equipment.

No Government Order on Hours to Sell Gasolene

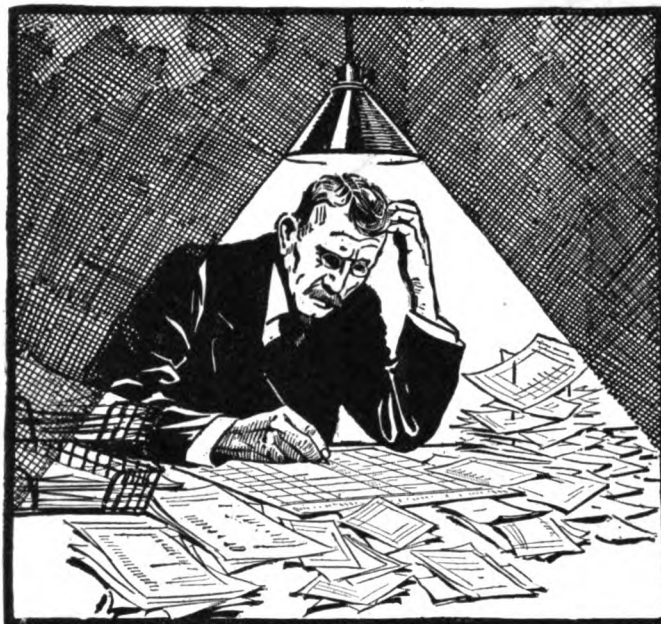
The Fuel Administration issues the following:

The attention of the War Industries Board and of the United States Fuel Administration has been called to the wide prevalence throughout the United States of a mistaken impression that some order or recommendation has been issued from Washington with respect to the sale of oil and gasoline. In some places, local automobile dealers' associations have even issued circulars laying down the rule that dealers in oil and gasoline must make no sale of these products on Sundays and holidays or after 6 p. m. on other days, and stating "It is now an order from Washington."

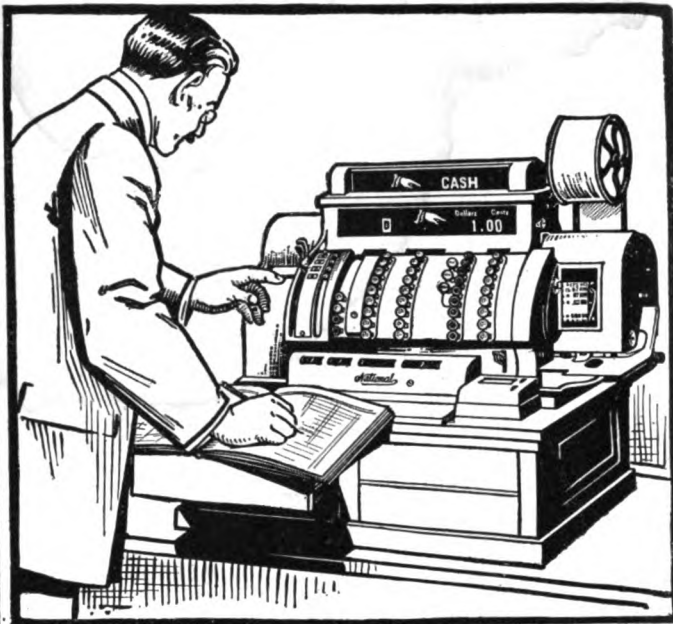
No Governmental Order.

No such order or recommendation has been issued by any Government authority or with any Governmental approval. The Fuel Administration has urged that wasteful practices in the use of oil and gasoline be stopped and that all reasonable and proper measures of conservation be observed. No limitations, however, have been placed upon the sale of these products.

It is not intended to interfere in any way with the activities of automobile dealers' associations or others who, after consideration of the local conditions, may seek to bring about some limitation upon the hours during which oil and gasoline shall be sold to the public; but it is desired that it be clearly understood that no orders or recommendations have been issued by any Governmental authority upon this subject.—The Official Bulletin, Washington, D. C., August 2, 1918.



The old way



The new way

A man should not do the work a machine will do for him

A merchant, with all his troubles, should never do the work that a machine does better and quicker.

Our newest model National Cash Register makes the records which a merchant needs to control his business. It does fifteen necessary things in three seconds.

Without the register a man cannot do these things in half an hour.

With the register, even a new clerk can do them just by pressing the keys.

Our new electric machines are as much better than old machines as an up-to-date harvester is ahead of a sickle for cutting grain.

The latest model National Cash Register is a great help to merchants and clerks.

It pays for itself out of what it saves.

Merchants need National Cash Registers now more than ever before

FILL OUT THE COUPON AND MAIL TODAY

Dept. 3306, The National Cash Register Company, Dayton, Ohio.

Please give me full particulars about the up-to-date N. C. R. System for my kind of business.

Name _____

Business _____

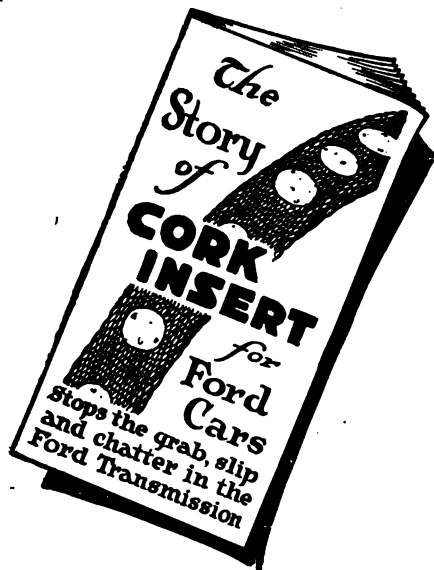
Address _____

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Accessories and Garage Equipment

FORD OWNERS INVITED TO SEND FOR INSTRUCTIVE BOOKLET.

A new booklet, just off the press, goes thoroughly into the question of transmission action of Fords. It tells how a smoother working Ford can be had, simply by taking proper thought in the purchase of transmission lining. The causes of the chattering and vibration which attends the transmission action in the Ford are analyzed, and the method of overcoming them clearly shown.



One of the features of the booklet, which is named "The Story of Cork Insert," is views of the factory where cork insert transmission lining is prepared. The big machines are shown which punch 24,000 sets of linings in an eight-hour working day. Also the rooms of girls are pictured in the act of setting the corks into the linings. One girl can set 10,000 corks in a day.

Another department of interest is the pages which give the experiences of Ford owners in the use of cork insert. After reading of the long mileage secured and the smoothness and quietness of operation, it is not difficult to understand why cork insert transmission lining has come into more extensive use during its first year on

the market than any other automobile accessory ever offered the public.

A copy of the booklet, "The Story of Cork Insert," will be mailed gladly to any reader of this journal who will address request to Advance Automobile Accessories Corp., 56 E. Randolph St., Chicago.

H. S. PRUYN, JR., BUYS BEARING WORKS.

The business of the Pruyn Ball Bearing Works at 1919 S. Michigan avenue, Chicago, has been purchased by H. S. Pruyn, Jr., who will continue to operate on a wider scale under the title of Pruyn Bearing Exchange. The firm will handle not only reground ball bearings but a complete line of new ball and roller bearings of every type.

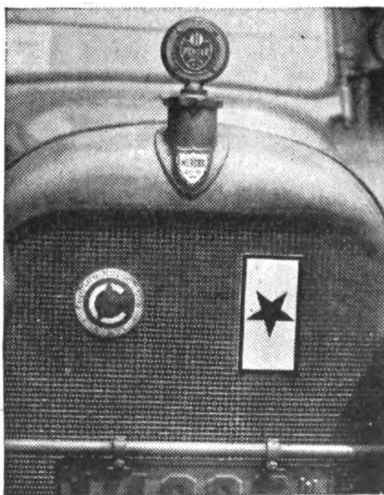
KLAXON PRICES RAISED.

The Klaxon Company, manufacturers of Klaxon automobile warning signals, has announced that due to increased cost of labor, material and transportation, it has been forced to increase prices.

To meet these changed conditions and yet not disturb the Klaxon basic list prices as published January 23, 1918, and as shown in the printed matter and advertising, and in the catalogs of the trade, the concern adopted the method of adding 5 per cent to the current list prices.

LATEST THING IN PATRIOTIC EMBLEMS.

Everyone with a boy in the service is proud of the fact. The service flag idea is adapted for the car owner by the handsome steel radiator emblem shown in the picture, lithographed in red and blue, colors that never will fade or become dim. The size of this emblem is 3½ by 5½ inches. It is made of 28 gauge steel, has beveled edges and is complete and ready to attach. It is so durably made that it will last as long as the car.

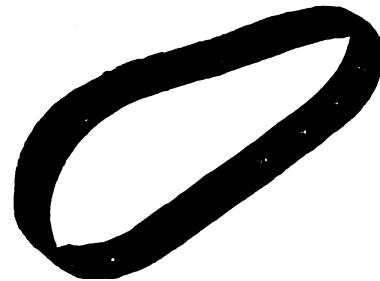


The retail price of the Patriotic Automobile Radiator Service Flag Emblem is 50 cents. Liberal discounts are allowed to dealers and jobbers, which will gladly be given on application to the manufacturer—L. & M. Service Specialty Co., 504 Sherman St., Chicago.

CONSTANT TIGHTENING RUINS ANY FAN BELT IN A FORD.

"The fan belt is a source of untold annoyance to many Ford owners and the biggest

cause is—Mr. Owner himself." So says an official of the company that makes cork insert fan belts. "Perhaps the true cause of the trouble," he adds, "is that tightening the Ford fan belt is made too convenient. It is such an easy matter to tighten the belt a half turn that some owners get in the habit of doing it every time the hood is raised or every time they start out for a ride. This is done with the misguided notion that a tight belt is an efficient belt.



The Ford owner knows that the water in his radiator frequently boils. He knows that this is often caused by a slipping fan belt. But there is such a matter as overdoing a good thing, and the tightening up habit comes under that head. There is just so much stretch in a fan belt. Any belt when stretched beyond its normal limit is, on the road to ruin. Its service from then on will be one of constant dissatisfaction.

Cork insert fan belts are designed to give perfect service without the need of their being stretched taut. If properly used they will not stretch and never will slip. In other words, they give perfect service when run quite loose. The looser you can run a fan belt the longer it will wear. We are even attaching pasters to cork insert fan belts giving just this kind of advice."

An interesting booklet has just been issued by the Advance Company telling about their transmission lining and fan belts for Fords, and a copy can be secured by addressing the Advance Automobile Accessories Corporation at 56 E. Randolph St., Chicago.

DIXON GRAPHITE WILL CURE SQUEAKY SPRINGS.

One of the most annoying things about an automobile is a squeaky spring. When a motorist complains about it to his garage man or to the dealer who sold him the car, it is evident that he has not been using the right kind of lubricant. Plain oils and greases squeeze out and permit friction between the bare metal of the leaves. The proper lubricant is one that will form a tough, enduring film between the leaves, preventing metal-to-metal contact.

The Joseph Dixon Crucible Company, Jersey City, N. J., manufacturers of Dixon's Motor Graphite, give this advice about lubricating the springs: Jack up the car so that all the weight is off the springs and spread the leaves apart with a screw driver or instrument provided for that purpose. Then smear a creamy mixture of kerosene and Motor Graphite between the leaves.

MOTOR PARTS CO. HAS NEW PLACE AT PHILADELPHIA.

The Motor Parts Co. has moved its main office to 847-849 North Broad street, Philadelphia, after being located at 818 North Broad street for six years. The concern has branch houses at Boston, Buffalo and Springfield, Mass.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....
.....
.....

Name
Address

Service

CAR owners will generally estimate the quality of your service by the quality of the product you sell.

Satisfaction to car owners—satisfaction and profit to dealers—that is the ultimate aim of Harvey Service.



THERE'S A HARVEY JOBBER NEAR YOU
Our new catalogue giving Complete measurements
of over 900 Styles of Springs is yours on request

**HARVEY SPRING
& FORGING CO.**

922-17th Street

RACINE, WIS.

Mr. Ford Owner: You Can Help Win the War

By making your car more efficient. Reduce fuel consumption, eliminate repair bills, get more power and more PLEASURE by using

**WHITE
STAR
Extra Quality
Motor
Oil**



On this point the Ford Motor Company is thoroughly convinced. One trial of the oil will also convince you.

READ THIS!

White Star Refining Co.,
Detroit, Mich.

(Attention of Mr. Earhart)

Gentlemen:—Enclosed please find copy of contract properly signed, for our requirements of White Star Extra Quality Lubricating Oil for our Factory and Branch Houses.

We have adopted your oil after careful experiments and tests as best adapted for our cars, and shall expect you to continue the present high standard, as to quality, etc.

Yours very truly,

(Signed) FORD MOTOR COMPANY.

When you call for oil next time just say:

**"Give me the oil that
FORD uses"**

For further information MEET US AT
THE AUTOMOTIVE & ACCESSORIES
EXPOSITION, CHICAGO, MU-
NICIPAL PIER, SEPT. 14th to 21st,
or address

White Star Refining Co.
DETROIT, MICH.

Special To Dealers

A few communities still have no representation on our products. If you want to connect with the most substantial proposition in oil-dom, get in touch with us at once.

SHALER ROADLIGHTERS PROTECT USERS.

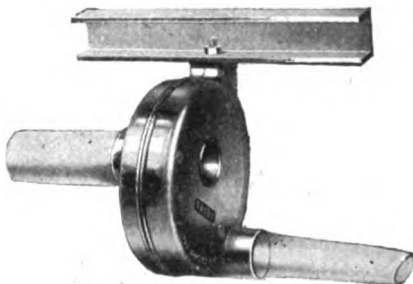
Protection of the user against the blinding glare of headlights he meets is one of the leading advantages of the Shaler Roadlighter over headlights with clear glass or other fronts. In addition it enables the user to comply with laws, where they exist, by eliminating his own glare; it illuminates the full width of the road; it throws a more intense light far ahead than clear glass; it shows the road through fog, rain, or dust; and it lights up the road signs as they are passed.

The scientific design of the Roadlighter accomplishes these functions in a novel manner. Instead of considering the light from the lamp as a single beam which must be wholly diffused to eliminate glare, with the inevitable shortening of range, or which must be limited vertically to the legal height, this device divides the light into three distinct beams. These are distributed on the road so as to produce the ideal lighting condition—a long, narrow, concentrated distance beam and two other concentrated beams that taken together, give the effect of a pair of regular headlights plus two spotlights set to illuminate the foreground and edges of the road.

The trademark of C. A. Shaler Co., Wau-pun, Wis., prominent manufacturers of accessories for many years, is carried by this new accessory which meets a ready demand by eliminating the greatest danger of night driving. Shaler Roadlighters are made in sizes to fit all cars. Retail prices are \$2.75 for Ford size or smaller and \$3.50 for all larger sizes, west of Denver 25c additional.

VACUUM MUFFLERS SAID TO HELP ENGINE POWER.

It is said that the use of the Vacuum muffler actually increases the power of engines to which it is attached. The Vacuum Muffler Corporation states that not only has this been proved through tests by Joseph Tracy, the well known automotive engineer, but it has been demonstrated in actual service under ordinary working conditions.



The Vacuum muffler is made of two castings fastened with three bolts and has no moving parts. It never contains a sufficient quantity of gas to produce explosions and is guaranteed against blowouts. The claim is made that an engine with this muffler attached gets greater fuel efficiency—especially at point of maximum torque—than with an absolutely free exhaust. It is made by the Vacuum Muffler Corporation, 154 Nassau St., New York, where dealers can write for terms.

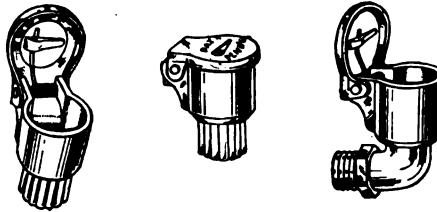
STEVENS "WARTIME ECONOMY" CATALOG.

At a time when the motorist and dealer are squaring up their purchases with wartime economy—avoiding frills and adhering strictly to accessories that make for increased efficiency and comfort in motoring—a catalog like that now being issued by the house of Stevens & Company, 375 Broadway, is of unusual merit and timely interest.

More than two hundred motor necessities are interestingly described in the new Stevens book which is replete with bright and informative illustrations. There are sixty-four pages devoted entirely to Stevens Products and among these accessories for Fords are prominently displayed. A copy of this new catalog will be mailed to any dealer on request.

REX OIL CUPS ARE ALL ENCLOSED.

Rex oil cups are all enclosed, being made in a one-piece shell or body. The spring is enclosed without obstructing the bore, so that the lid is easily opened and is self-closing.



The spring is constantly lubricated and self-draining, thus preventing rust or gumming. The cups are dust-proof as well as rain-proof and may be painted without affecting the mechanism or action. They are marketed by Frank X. Devlin, 198 St. Clair Ave., Detroit, who has an interesting proposition for motor tradesmen.

JONES SPEEDOMETER FIRM HAS NEW BUILDING.

To keep pace with the rapidly increasing demands for Jones speedometers, additional manufacturing facilities were necessary and the company added another building to the existing plant at New Rochelle, N. Y. The new structure contains four stories and basement, being 76 feet wide by 170 feet long, ceilings 13 feet high.

To give absolute fireproofness the building is of solid reinforced concrete with brick facing; steel sash windows are used on about 60 per cent of the wall area. Stairways are provided at each corner of the building built in with fireproof wall so that outside fire escapes are unnecessary.

AMONG THE MANUFACTURERS AND EXECUTIVES.

J. Robin Harrison has been made manager of the advertising and publicity departments of the Parrett Tractor Co., Chicago. He was formerly in the advertising department of the National Cash Register Co., Dayton.

A. C. Burch is now vice-president in charge of sales for the Clyde Cars Corporation, a motor truck producer at Clyde, Ohio.

John A. Cleary has become associated with the Cadillac Motor Car Co. at Detroit. He was formerly head of the advertising and sales promotion activities of the Automobile Sales Corporation at Philadelphia.

B. B. Schmidt has been appointed state wholesale sales manager of the Dominant Motor Car Co., Liberty distributors at Butte, Mont.

H. A. Van Tine, the veteran of the automobile business, whose fortunes have followed closely those of William B. Hurlburt, president of the Hurlburt Motor Truck Co., is again with his old chief as factory manager of the big plant of the company at 133rd street and the Harlem river, New York. Mr. Van Tine was with Mr. Hurlburt in the early Packard branch days in New York and again while Mr. Hurlburt was with the E. R. Thomas Motor Car Co. as branch manager.

J. A. Scullin has been appointed manager of the Cleveland branch of the Mason Tire & Rubber Co.

William A. Scharon has been appointed advertising manager for the tractor bearings division of the Hyatt Roller Bearing Co. He was formerly with the advertising departments of the Timken-Detroit Axle Co. and the Packard Motor Car Co.

H. A. Conlon, who has been sales manager of the Acason Motor Truck Co. at Detroit, has been elected vice-president and director of sales for the concern. He succeeds J. F. Bowman, recently resigned as vice-president and general manager.

H. R. Hyman has added the duties of production manager to his work as advertising manager of the Cole Motor Car Co., Indianapolis.

Joseph L. Hardig has been appointed director of advertising of the Remy Electric Co., of Detroit. Mr. Hardig's experience includes a vast amount of merchandising research work, his ability along this line having proved of value to some of the leading motor car, motor truck, tire and accessory manufacturers in the United States.



Joseph L. Hardig Frank L. Wurl

Frank L. Wurl, who has been intimately connected with many new developments in automotive ignition, starting and lighting, has been made sales engineer of the Remy Electric Company, located at Detroit.

Mr. Wurl went to the Remy Company a few years ago as electrical engineer, but was soon placed at the head of the research laboratories.

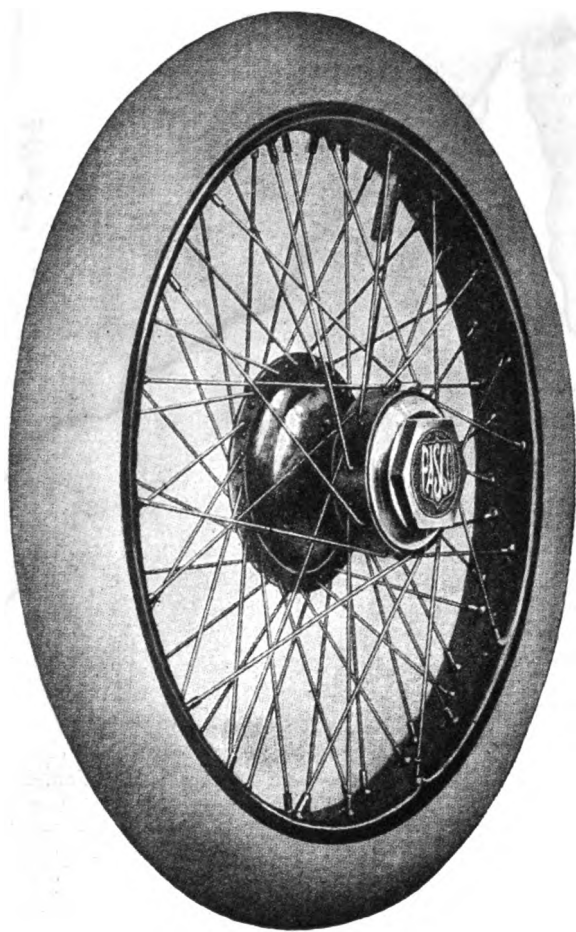
H. S. Benjamin has been made sales manager for the Holley Carburetor Co. at Detroit. He has been general sales manager of the Saxon Motor Car Corporation and before that was president of the Hundred Point Club, an organization of National Cash Register Co. salesmen.

Hi Sibley has resigned as advertising manager of the Republic Motor Truck Co., Alma, Mich., and is now a member of the Packard advertising force at Detroit.

C. O. Powell is now advertising manager for the Buda Co., Harvey, Ill., maker of engines for trucks and tractors.

F. W. Henderson has been elected president of the Signal Motor Truck Co., Detroit, as successor to A. C. Burch.

J. H. W. Mackie is now sales manager for the Saxon Motor Car Corporation at Detroit. He formerly headed the Mackie Motor Co., Des Moines, Iowa, and is a veteran of the industry.



PASCO Qualities

Make a PASCO wheel the standard of comparison among automobile manufacturers, as well as the buying public.

The best material, the highest workmanship, the most careful inspection—these three factors are partly responsible for PASCO'S reputation. But in addition, PASCO'S distinctive four-series tangent spoke-lacing, indestructible hub-cap, and unique safety locking-device, have convinced the most skeptical that the PASCO is a wire-wheel out of the ordinary.

Practically all the leading makes of air-craft use PASCO Wire Wheels. This fact is significant.

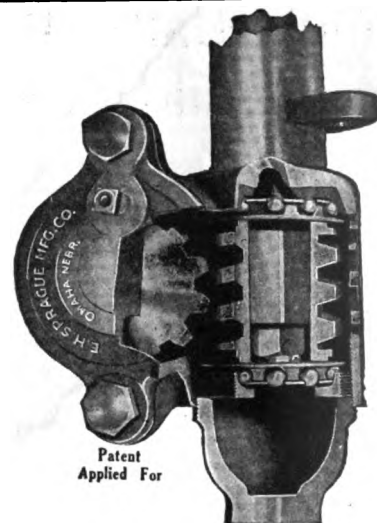
Let us send interesting literature.

DEALERS: Write for profitable sales-plan.

NATIONAL WIRE WHEEL WORKS, Inc.
Dept. G. GENEVA, N. Y.

Service Stations in Principal Cities

For
FORD
Cars



SPRAGUE WORM STEERING GEAR FOR FORDS

Dealers, Read This!

Every Ford user knows his car needs stronger steering equipment—something to get him out of the ruts; prevent cramping and upsetting; hold to the road; relieve the strain on the arms, etc.

You can sell the Sprague Worm Steering Gear under our guarantee of money back if the user is not satisfied.

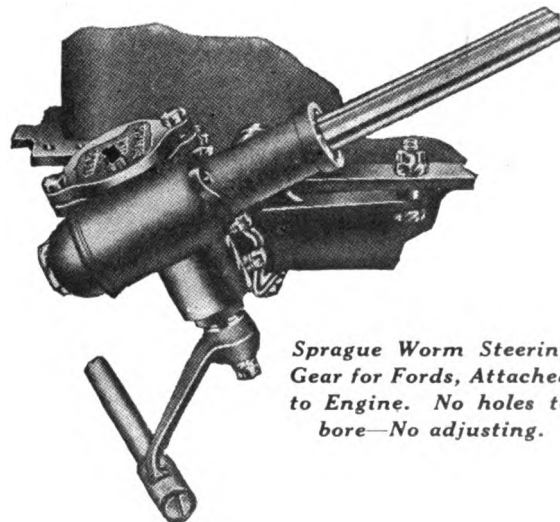
Ball bearing-floating shaft model. Made from high carbon steel; housing of malleable iron. Better worm steering gear than used on many higher priced cars.

Sells at \$15. You make liberal profit, also additional charge (usually \$2.50) for installing.

Get them from your jobber or direct. Write us for full information, advertising matter, etc.

You should easily sell this gear to 90% of the Ford owners in your community.

E. H. Sprague Mfg. Co.
Dept. 8 Omaha, Nebr.

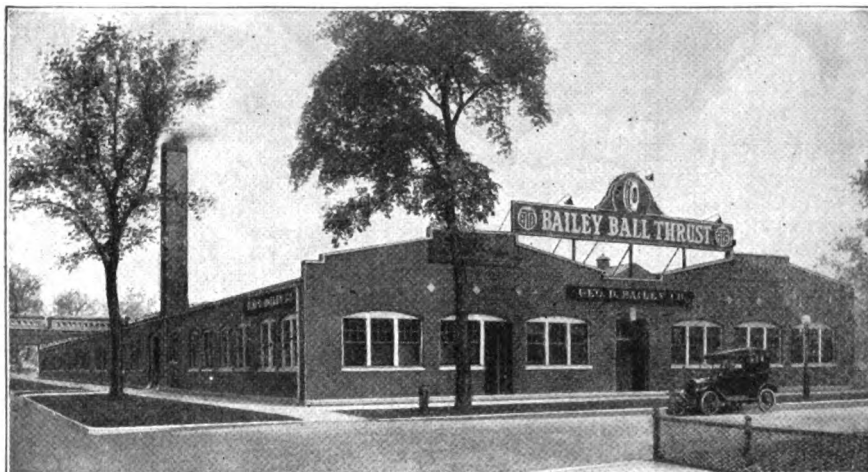


Sprague Worm Steering Gear for Fords, Attached to Engine. No holes to bore—No adjusting.

Bailey Ball-Thrust Firm Builds New Chicago Plant

A little over a year ago The Geo. D. Bailey Co. was organized for the purpose of marketing the Bailey ball thrust bearing for Fords and Chevrolet 490 cars. This ball bearing was to replace

selling policy for the Bailey ball thrust one that has proved to date a most satisfactory one to dealers and jobbers throughout the United States and Canada. Judicious advertising also has



New Plant of George D. Bailey Company

the flat thrust washers that take the gear thrust at the left side of the differential and which, because of their flat surface, produce friction and wear thin, causing gears to unmesh.

The company officials, after having perfected their ball thrust bearing which, containing steel balls, was frictionless, and thereby permitted no wear, proceeded to market it through the regular dealer channels in a conservative manner, feeling that the market was present for such a bearing. A greater demand soon made itself evident and that there was a popular demand for a bearing of this type is evidenced by the fact that in just one year's time the Bailey company has been forced to move from its previously small quarters and build its own modern factory.

The new plant, located at 4500-4506 Ravenswood avenue, Chicago, is equipped with \$75,000 worth of the latest type of machinery for manufacturing not only the Bailey ball thrust but their new product, the R C magneto coupling for trucks, tractors and passenger cars. It is so arranged as to enable the company to turn out its products economically on the highest efficiency basis as well as placing it in a position to manufacture other products the company has in mind.

Not a little of the success of the rapid growth of the Bailey company can be attributed to C. F. Ferguson, vice-president and general manager, whose intimate knowledge of merchandising methods has enabled him to inaugurate as a

played a large part in the success of this manufacturing concern.

Slater New Sales Chief of Williams Foundry Co.

W. J. (Bill) Slater has resigned as pneumatic tire sales manager of The Firestone Tire & Rubber Co. to become general sales manager of The Williams Foundry & Machine Co., Akron, the largest makers of tire building and repairing equipment in the world.

(Continued from page 21)

the part of the owners of the cars and it is freely stated that practically all other lines of industry are willingly curtailing the unnecessary from their business, and it is therefore only equitable that the Automobile Industry do likewise.

The keeping open of service stations, oil and supply depots, requires labor, which is manifestly for the purpose of making it easier to use automobiles for pleasure purposes, and as labor is one of the scarcest commodities at this time every saving in this direction is not only necessary but imperative.

"There is plenty of gasoline and oil for automobile use, if it is rationally and sensibly used, but there will not be enough if the automobile user continues to waste it by using his automobile unnecessarily. Therefore it behooves not only the dealer, but the owner as well, to conserve in this direction as much as possible, not so much on account of present necessity as against

the possibility of the future. Whatever small additional trouble it may be for the owner to obtain supplies on Saturday it is so negative that no patriotic owner will object.

"Sensible, reasonable use of the automobile on the part of the owner, and reasonable, sensible attitude on the part of the automobile dealer, garage man, supply depot, and oil station, is in itself an absolute assurance that no drastic order will be given requiring some limited use of automobiles, or of gasoline, oil, or other supplies, and the possibility of a seven motorless Sundays order, or any similar edict is very remote.

"The closing movement on the part of the industry indicates very plainly its sincere desire to help in every way possible to bring about a speedy conclusion of the war and shows without question that the automobile industry is willing to conserve in all of the material that it uses in the operation of its product, as well as save the manpower it requires to maintain the establishments considered necessary in the past."

E. E. Peake, who recently has been elected executive secretary of the National Automobile Dealers Association, is a man who has made a remarkable record in organization work and also is familiar with every detail of the automobile dealers' business. He has been placed in charge of the campaign for new members to strengthen the National organization.

Because of many serious problems now confronting the automobile business a nation wide campaign to secure 5,000 new members in 90 days has been started by the National organization which has been doing a splendid work in the past year in safeguarding the interests of the automobile dealers. This work has been along constructive lines and has resulted in a material benefit to the business and greater service to the public. The Association has reached the point where in order to keep pace with the widened scope of its activities it is necessary to increase the membership.

The campaign for new members is already under way in many parts of the United States and indications are that within a few weeks the National Association will be one of the strongest organizations in the country.

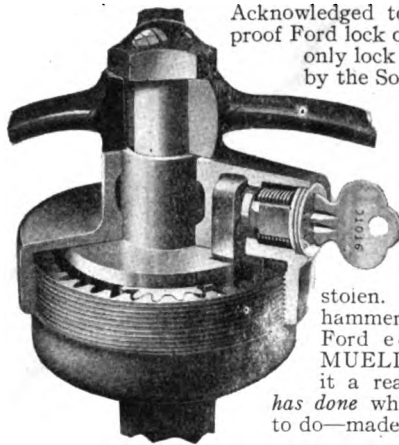
Mr. Peake has been for six years executive secretary of the Kansas City Motor Car Dealers Association and is president of the National Association of Automobile Show Managers. He was a member of the special committee of the National Association which conferred with the Ways and Means Committee of the House of Representatives recently, when they considered questions involving curtailment of steel shipments to automobile manufacturers and a heavy tax on gasoline.

AN UNBEATABLE COMBINATION

will be found at Booth 29, Automotive and Accessories Exposition

The MUELLER LOCK

for Fords exclusively



Acknowledged to be the only theft-proof Ford lock on the market. The only lock which was approved by the Southern Underwriters Conference.

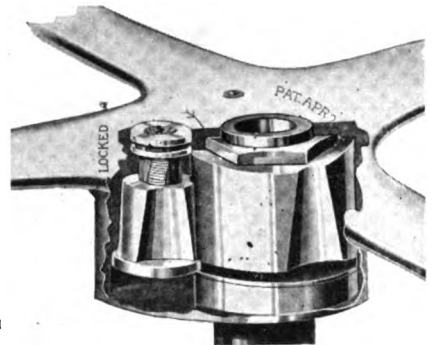
Locks the steering wheel rigid and front wheels parallel with side of car. A Ford thus equipped cannot be driven or towed—consequently not stolen. No thief with a hammer can get away with a Ford equipped with a MUELLER. You will find it a ready seller because it has done what other locks aimed to do—made the Ford safe.

The "RELCO" LOCK

for all other cars

The lock that the motoring public has been waiting for. Gives absolute protection. Adaptable to any make of car other than Fords.

Mechanically a wonder. Fitted with the King-Multiple-Tumbler Lock, capable of countless variations and for which no master key can be made. A half turn at the key locks or unlocks it without moving the lock from its position on the steering shaft. Once locked, car cannot be driven or towed. Powerfully made—no thief with a hammer can break the "RELCO."



Both locks approved by the Underwriters Laboratories and afford 15% discount on insurance

DEALERS Handle locks that give real protection. Liberal profits. See us at Booth 29, Municipal Pier, Chicago, Sept. 14 to 21. If you are not going to be there write today for particulars.

THE RELIANCE COMPANY

Distributors in Every State

411 So. Sangamon Ave., Chicago, Ill.

Milwaukee Curb Pumps

Power Or Hand Operated



Master Electric

From among the wide range of outfits which the Milwaukee line offers you, you can surely find one to exactly fit your needs.

Milwaukee gasoline curb pumps have earned an enviable reputation as business-getters. Speedy service and absolutely accurate measurement are the features that determine whether the motorists will patronize you or a competitor; speed and accuracy are the features which stand foremost in Milwaukee Outfits.

If you have an old, obsolete outfit, it will pay you to install a fine, trade-attracting Milwaukee Pump.

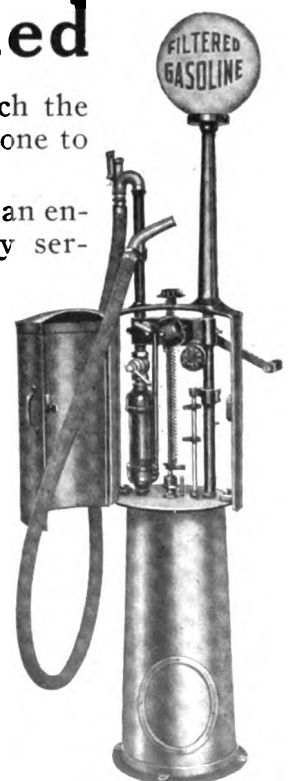
Write today for catalog and interesting literature.

Milwaukee Tank Works

Milwaukee, Wisconsin

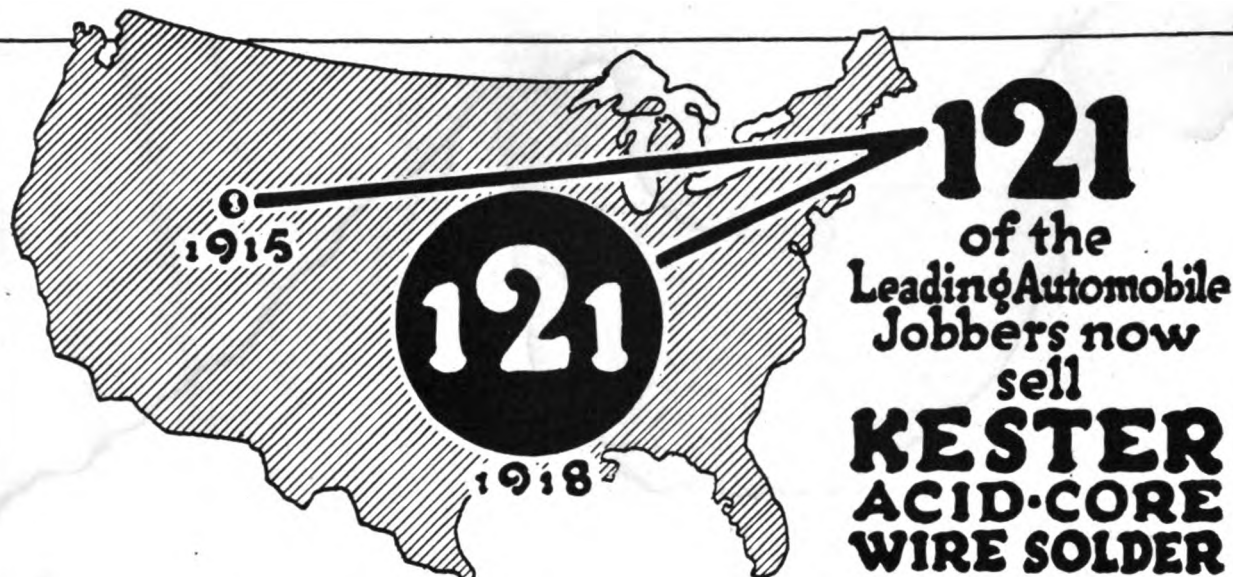
Manufacturers of 30 types of gasoline and oil pumps and storage outfits.

Prompt shipments from warehouses in New York, New Orleans, Milwaukee and San Francisco.



Type 37

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



This means national distribution. These 121 jobbers are representative of the foremost houses in the United States. There is hardly a city which is not covered or visited by their salesmen.

There is no reason, Mr. Garageman, why you cannot get *Kester Acid-Core Wire Solder* at any time—and if your jobber cannot supply you send us your order direct.

Grasp the significance of the above! Note that in 1915 we had but 1 jobber—and in 1918 we now have 121—and "still increasing." The cause for this, of course, is that *Kester Acid-Core Wire Solder* has proved its value in general garage work. Give it a chance to show what it can do for you. Put in your order for a trial lot. Sold in 1 lb. coils and on 1, 5 and 10 lb. spools.

Order from your jobber

CHICAGO SOLDER CO.
CHICAGO U. S. A.

P. S.: Also Manufacturers of Kester Rosin-Core Wire Solder.



You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

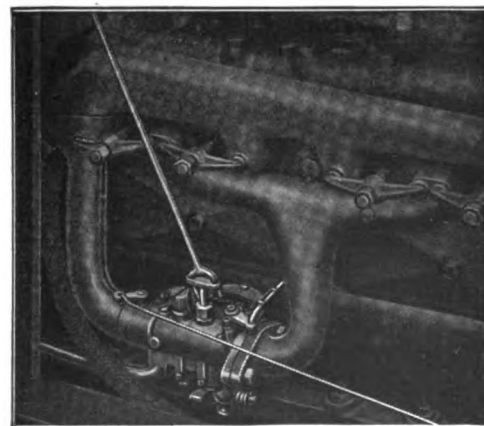
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



New Regal Plant Owner Plans Service to Users.

Maurice Rothschild is today the sole owner of the Regal Motor Car company, and of the Regal factory and grounds at Detroit. The factory comprises over 300,000 square feet of floor space on Piquette avenue, Detroit, and will likely be utilized for car building as of old—but not until after the war insofar as car building is concerned—it being the plans of Mr. Rothschild at present to inaugurate Regal service on a high grade for the owners of this car throughout America. Mr. Rothschild will make every endeavor in the intervening time between the present and the war's close to so reorganize the company's affairs that it will be possible to start manufacturing on a large scale at that time.

That start would be made now, but the new owner of the Regal company will bow to the wishes of the government in the conservation of steel and will make no effort to start active manufacturing at present. With the time which he has before him the Chicago-Detroit capitalist believes that it will be possible to organize a working force which will be in position to carry out all of the plans he has in mind. He is alone in the ownership of the valuable properties which, due to war conditions he was able to secure for \$500,000, although the appraised value of the property was \$1,200,000.

Mr. Rothschild was a bond holder, stock holder and creditor, and objection was made to his offer, but Judge Arthur J. Tuttle, of the Bankruptcy court accepted the offer in view of the curtailment of the motor car industry by the government having substantially decreased the value of the holdings. The judge believed that the price offered by Mr. Rothschild was the best that could be obtained at this time and the real estate, factory, stock and all of the manufacturing assets of the company were turned over to him.

The Regal company will be maintained as an active business concern. Mr. Rothschild said that his plans in general included the shaping of the manufacturing for the future, a considerable job as the

output of the company after the war is likely to be on a much larger scale than ever before. The Model J. Regal, four cylinder model, will be continued indefinitely. In the interval until the war's close the factory will be devoted to service and will be arranged to give the best results in this field.

Plans for Any Shortage in Supply of Gasolene

The United States Fuel Administration, through Mark L. Requa, director of the oil division, has issued the following statement in regard to gasolene:

"Up to the present time there has been sufficient supply of gasolene to meet all requirements, but in order to be prepared for any shortage should it arise plans are being considered by the oil division of the Fuel Administration, in co-operation with the automobile industry and the national petroleum war service committee, for the purpose of determining the most satisfactory method of gasolene conservation.

"It is not expected in any event that it will be necessary to restrict normal consumption for freight vehicles, and provided there is a reasonable conservation by all concerned, it may not be necessary to seriously interfere with pleasure cars and motor boats.

"It must be borne in mind, however, that

the paramount use for gasolene is for war purposes, all of which requirements will be supplied. The volume of this will largely govern the situation.

"It seems possible that rational conservation by the public will render Government action unnecessary."

Fire-Choke Offers Profit Chance For Live Automobile Tradesmen

(Continued from page 27)

tests are of necessity made out of doors. it works even better inside where there is less air to combat. Unlike other dry chemicals, it cannot cake in the container or deteriorate with age. It has the unqualified endorsement of some of the leading fire chiefs of the country, to say nothing of people who have used it successfully on real fires.

Fire-Choke is marketed exclusively by The Flexlume Sign Co., Buffalo, N. Y. In order to obtain quick distribution they are making an unusual offer to dealers, full particulars of which will be sent upon request. Dealers who are now handling it describe it as a remarkably quick seller, for car owners are quick to see that it gives them a maximum of protection at a price which is very low as compared to other fire extinguishers. Fire-Choke is put up in two sizes, retailing at \$3.50 and \$5.

New Rules for Labor Recruiting Adopted by National Government

(Continued from page 28)

"These state quotas will in turn be distributed among localities. Within each locality, employers in non-war work, including those who are only partially in war work, will be asked to distribute the local quotas from time to time amongst themselves. Quotas by localities and individuals are to be accepted as readily as they are for Liberty Loan and Red Cross campaigns. This plan of labor quotas is a protection for all communities.

"The object is to keep any community from being drained of labor, and to use local supply, as far as possible, for local demand. The situation, however, is such that in certain cases some men may have to be transported over long distances."

According to the new Automobile Blue Book, the scenery twelve miles north of Salem, Indiana, on the Jackson Highway is very beautiful. For two miles the road gradually ascends, winding as it goes, making 42 turns in that distance. But although the tour-bible does not state, it must be lovely scenery especially on a dark night, when the driver is alone and his lighting system is ill.

This is what you should know about your business and is a sample balance sheet.

FORM NO. 3.	
Please answer—YES or NO—whether or not you are able to give the following information from your books.	
	Answer —YES or NO— on dotted lines.
ASSETS	
CASH:	
On Hand
In Bank
Total Cash
Notes Receivable
Accounts Receivable—Trade Debtors (Question 23)
Due from relatives or others
LESS: Reserve for Bad Debts (Question 20)
Total Accounts Receivable
Stock on Hand Carried at Cost Price
Store Property
LESS: Depreciation
Store and Office Equipment as per Inventory (Question 6)
Total Assets
LIABILITIES	
Notes Payable
Accounts Payable—Trade Creditors (Question 22)
Cwing to relatives or others
Interest to Date on Notes Payable
Salaries and Wages Due to Date
Taxes Unpaid
Total Liabilities
BALANCE—Excess Assets over Liabilities (Net Worth)
Name of Member securing this information:
City..... State.....	Name of Merchant.....
City..... State.....	City..... State.....

"There's a Garage!"

To say that a garage needs an electric sign is like saying "Food will win the war". Everyone admits it. What we want to impress is — you need a

FEDERAL ELECTRIC SIGN

With most all garages using some kind of a sign, the man with the brightest and most attractive sign (by day as well as by night) is the man who gets the preference.

A Federal Sign will make your garage the most attractive to strangers as well as to home folks. The porcelain enameled steel of Federal Electric Signs cannot fade, rot, or rust. It never needs painting. An occasional washing keeps it looking like new.

Government Officials have approved the use of electric signs within the regulations of the fuel administration. The Federal embossed 16 inch letter sign costs only 5 cents per hour for electricity. Let us submit a sketch of a Federal Sign to fit your particular need.

BENNETT'S
AUTOS
SUPPLIES



COMMONWEALTH EDISON Co.
Edison Building, 72 West Adams St., Chicago
If located outside of Chicago address
FEDERAL SIGN SYSTEM (ELECTRIC)
Lake & Desplaines Streets, Chicago

Motorists Will Be Glad to Know About This—

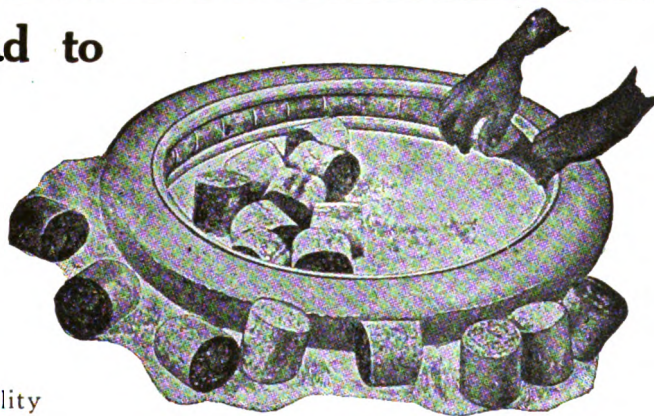
The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency — the **perfect substitute for air.**

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.



MIDLOTHIAN TEXAS.





When the soldering
job must be perfect
use
NOKORODE



the soldering paste preferred by discriminating users.

NOKORODE does its work thoroughly because of the thoroughness that is used in its manufacture.

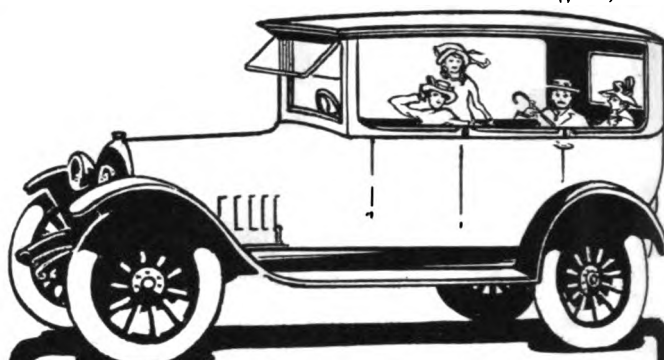
NOKORODE is compounded with such care that each particle contains every element of the flux.

Consequently NOKORODE is indispensable where a perfect, permanent soldering job is desired.

Especially suited for automobile work.

If your jobber happens to be out of Nokorode, order it direct.

The M. W. Dunton Company
Providence, Rhode Island, U. S. A.



**YOUR CUSTOMERS
will want this pump!**

You have heard the old maxim, "The proof of the pudding is in the eating."

The Jensen Auto Tire Pump has maintained a standard for the past four years and is **proof** and has proven its wonderful merits time and time again.

**JENSEN
TIRE
PUMP**

Ninety pounds pressure with one-fourth the effort of the ordinary hand pump.

Sounds mighty good—don't it?

W. H. HOWELL CO.
Geneva, Ill. U.S.A.



Purchase one and get the **proof**.

Write for jobbers' and dealers' discounts.

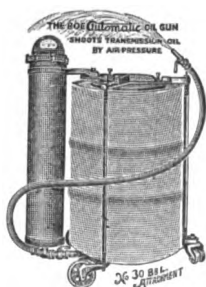
**Why Not Make Any BARREL a
Portable Self-Measuring TANK?**



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



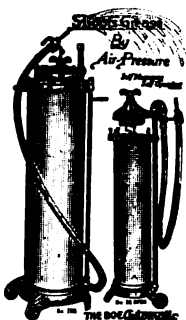
ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA



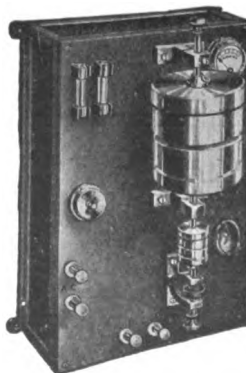
**The
Breco Converter
FOR**

charging batteries or for any other purpose where it is necessary to change A. C. to D. C. is **Far Superior**.

**HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE**

The new, modern method tested by years of everyday service. Endorsed by highest authorities.

Price, \$24.00 Up---Sizes, 1 Battery Up



Battery charging becomes a very simple, inexpensive and mighty profitable matter with the BRECO CHARGER.

Write for Catalog No. 22

**THE
BRECO ELECTRIC CO.**

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees

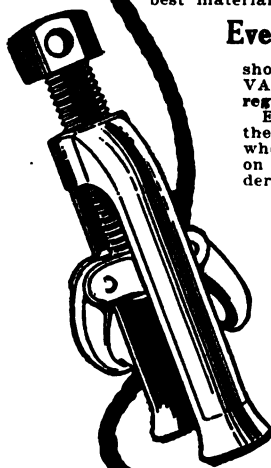


Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

You never can tell when the BUFFUM PATENT BUICK VALVE REMOVER will come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the **only** device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.



Every Garage and Repair Shop

should have a **BUFFUM BUICK VALVE REMOVER** as part of its regular equipment.

Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00 Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

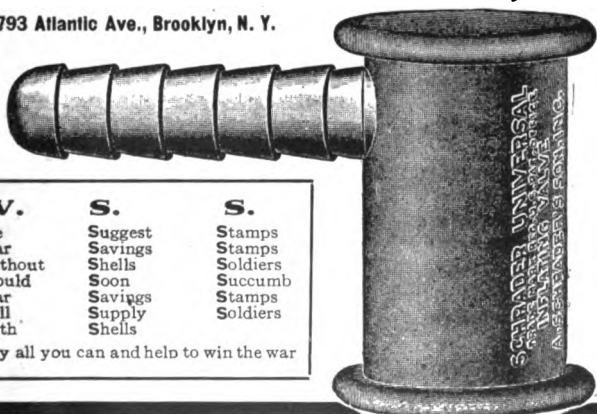
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a **SCHRADER** valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{3}{4}$ inch. Price, \$1.00.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war



Chicago's Municipal Pier Scene of NATIONAL TRUCK TRACTOR ACCESSORIES EXPOSITION

SEPTEMBER 14th to 21st

Trucks. This will be America's most representative war-time truck show, embracing the giants of transcontinental fame and the little local delivery hustlers. Trucks are in the limelight because of their great service at the front and at home—and all the best trucks will be shown at the Municipal Pier.

Tractors. Greatest ally of the Allies; all the giants of the farm and battlefield on display. Small tractors, large tractors; America's representative tractor manufacturers will participate in this great exposition—a stimulant to the broader agriculture necessary to meet war-time needs.

Accessories. A big part in war-time conservation is being played by automotive accessories which increase efficiency—mileage and service—and decrease cost of upkeep and operation. The accessories shown at the pier will bring home to everyone the tremendous strides which American manufacturers have made toward helping to win the war.

For details write

AUTOMOTIVE & ACCESSORIES EXPOSITION, INC.

Care Hotel New Southern

13th and Michigan Ave., CHICAGO

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

WILLARD SUPER HEATER

A great
saving
for the car
owner.

Big Profits
for You

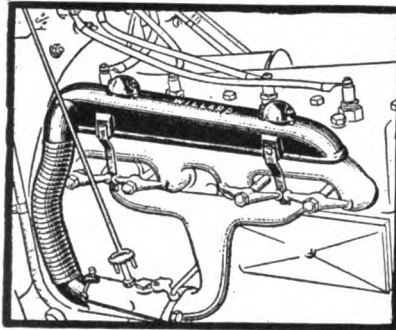
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD

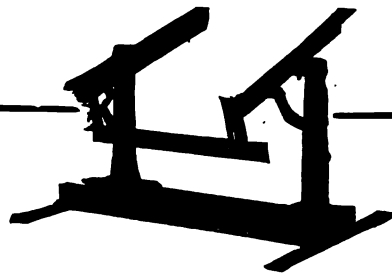


Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

**Monogram Users are
Quality Choosers.**

**NEW YORK LUBRICATING
OIL CO.**

**NEW YORK CITY
and CHICAGO**

Branches in Principal Cities



Pondelick Brothers

will
pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

Tire Insurance

THERE is not one serious argument to be advanced in favor of not buying a tire-pressure gauge.

Every man, woman or child who runs an automobile not only should have one but **MUST** have one if he, she or it cares anything about the mileage to be gotten out of tires.

When you buy a gauge, you pay for the gauge and save on the tires.

When you don't buy a gauge, you pay for the tires and save on the gauge.

Which would you rather do?



BUY A

TWITCHELL

AIR GAUGE

PRICE \$1.25
and save your tires

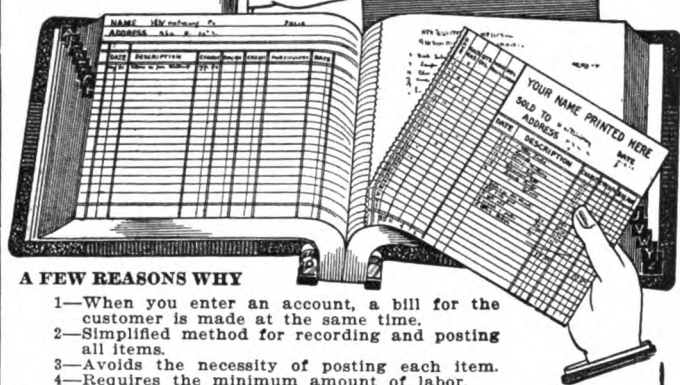
The Twitchell Gauge Co.
1518 So. Wabash Avenue, CHICAGO

SAVE TIME AND MONEY

Our **SPECIAL GARAGE** Bookkeeping Plan
Gives You the **HIGHEST POSSIBLE EFFICIENCY**

THIS particular device is especially adapted for garage use.

Garage keepers everywhere acknowledge this to be the most economical and practical system.



A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Horton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS
THOMAS J. HARTON & CO., Inc., 212x Church St. NEW YORK
Loose Leaf Specialties

GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

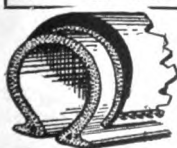
Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, **McDaniel** will put them back on the job.

Simply send your old tires **prepaid** to the address below, with your name and address attached. When the tires are received at the **McDaniel** plant they

are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the **SPECIAL McDANIEL DOUBLE TREAD PROCESS**. Your old tires are now made into one good tire ready to give you thousands of miles extra service.

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

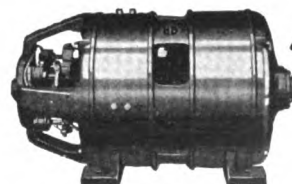
Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

BATTERY CHARGING PAYS BIG PROFITS



This new 32-battery equipment is designed especially for garages and battery service stations where large capacity is required to meet the ever increasing demand for battery charging. Ample designed 5 H. P. motor operates from city current, charging 32 6-volt batteries or equivalent at one time. Four separate charging lines and panels permit individual attention to every battery.

Bigger capacity means lower operating cost and bigger profits. It is wise, therefore, to figure ahead and install equipment with capacity to meet future requirements. Write at once for full information and terms under which outfit should easily pay for itself while you use it.



Shipped Under a Guarantee of Absolute Satisfaction or Money Refunded.

You Run No Risk.

We furnish also smaller capacity outfits or belt drive

where city current is not available. Write for full information.

Hobart Brothers Company
Box G8 - - Troy, Ohio

GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

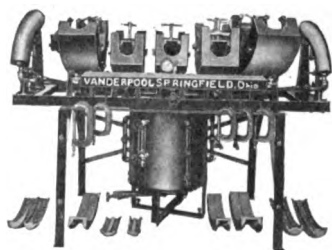
Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company
1002 Washington Boulevard
Chicago, Illinois



Do As We Say and Make Big Money

Open a Tire Repairing Shop. All the work you can do. Big profit on every job. We give instructions, sell you complete equipment and tell you how to start.



VANDERPOOL VULCANIZER

Only vulcanizer recommended by leading tire factories because the only one that repairs tires **EXACTLY AS THEY WERE MADE.** Write

WILLIAM VANDERPOOL CO.
SPRINGFIELD, O.

MAKE MORE PROFIT BY USING

STORM Reboring Machine

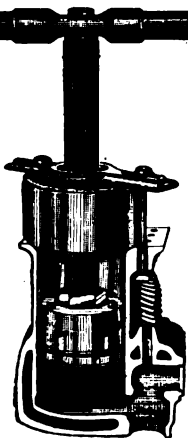
The most practical machine for any type of motor. **SIMPLE, SPEEDY, ACCURATE and RELIABLE** for hand or power. No shop complete without one. In daily use in all parts of U. S. A. and foreign countries.

Shortage of new cars makes it indispensable in large and small shops.

We furnish machines of varied capacities from 2 1/2" up. Also Special Ford Machine. For sale by leading jobbers. Oversize pistons for all makes of motors.

For further information, write

STORM MFG. CO., Thompson, Iowa



Smooth as the flight of the birds



going North for the Summer is the progress of the Ford equipped with

W. & C. Shock Absorbers

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



The Geyser VISIBLE GASOLINE DISPENSER is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage. Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.



Immediate shipment **VULCAN** seven leaf, heavy, oil tempered, fronts for the Ford. 588 other types, 90,000 springs in stock. Liberal discounts.

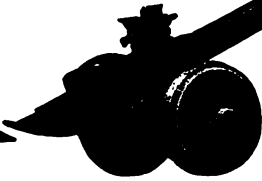
JENKINS VULCAN SPRING CO.

Factory and General Offices, Richmond, Indiana.

Branches with full stocks

St. Louis, Missouri	1402 Chestnut Street
Minneapolis, Minn.	1024 Hennepin Avenue
Dallas, Texas	209 South Houston Street
Reading, Pa.	538 Franklin Street
Sumter, S. C.	29 Caldwell Street

HOLMES WRECKING TRUCK



Be prepared for "wrecked car" business : its profitable.

The profit you make on "towing in" jobs depends on the time and labor consumed.

The HOLMES WRECKING TRUCK reduces this time and labor to a minimum.

Use the truck as a lever to raise the wrecked car, then put under either axle and you can bring in any sized car quickly and easily. It enables you to give the kind of service that builds business.

Hundreds of garages are using it.

Very strongly built—frame and wheels of malleable iron castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price \$50. Discounts to garages and dealers.

ROBT. HOLMES & BROS. :: DANVILLE ILLINOIS



GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

Beware of Imitational

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.



Sells for \$4.00
Worth the price of car

The DEFENDER is the "Standard" Ford Ignition Lock

Always demand the Defender, and take no imitations. The Defender safely locks the coil-box, and is the only lock that grounds the electrical system; this makes them thief-proof. Insurance Companies require the Defender and allow 15% off on Insurance.

DEFENDER AUTO LOCK CO.
DETROIT, MICHIGAN

AMPECO PRODUCTS

Sell readily because their superiority
is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

**American
Machine
Products
Co.**

Marshalltown,
Iowa



The PANVAR Way for a lasting finish

Panvar dries over night and gives a hard, glossy and lasting lustre to your car. Unlike varnish, Panvar is a quick self-leveling fluid which can be quickly applied by any one. Only \$1.50 worth of Panvar is required to re-finish a car.

Dealers and Garages

There is a big sale of Panvar possible in your territory. Garage-men can re-finish their customer's car over night.

Free sample of Panvar sent upon receipt of 10 cents to cover postage.
Get this sample and see for yourself.

THE PANVAR COMPANY
602 Bulletin Bldg. Philadelphia, Pa.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

REG. U.S. PAT. OFFICE



PISTON RINGS

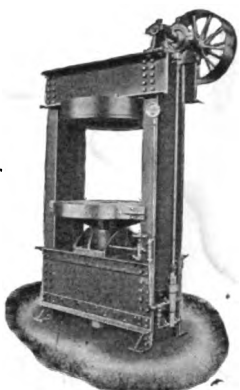
Put Energy In Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

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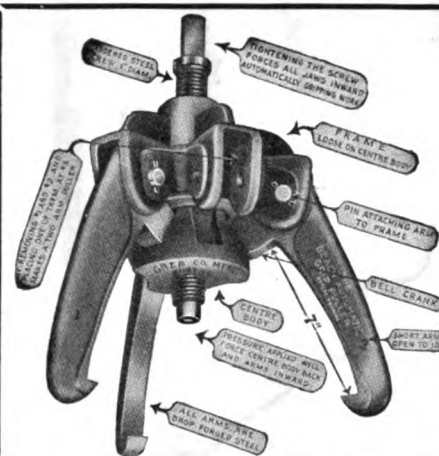
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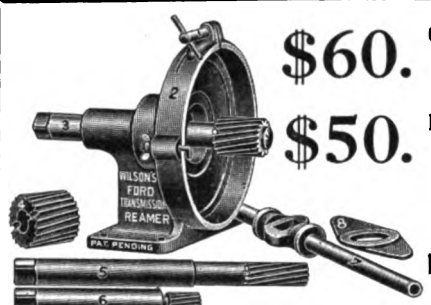
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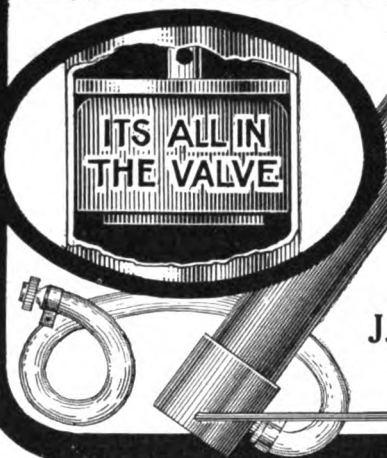
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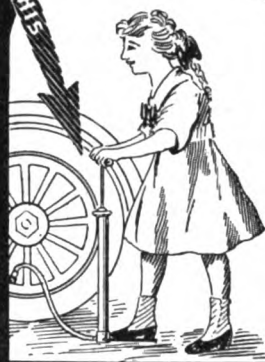
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Index to Advertisements

A		K	
Adams & Elting.....	—	Kennedy Car Liner & Bag Co. 63	
Advance Automobile Accesso- ries Corp.....	66	Keys Piston Ring Co.....	60
American Accessories Co.....	63	Kimball Tire & Rubber Co.....	—
American Bolt & Screw Case Co.....	61	L	
American Floor Surfacing Ma- chine Co.....	—	Lawrence & Co., L.....	62
American Machine Products Co. 59		Lawson Co., The F. H.....	—
American Oil Pump & Tank Co., The.....	6	Lourie Mfg. Co.....	60
American Technical Society.....	—	M	
Aske Automatic Voltage Regu- lator Co.....	—	McDaniel Rubber Co., Leo.....	57
Atlas Auto Supply Co.....	—	Marvel Carburetor Co.....	51
Inside Back Cover		Marvel Machinery Co.....	—
Auto Cape Top Co.....	62	Miami Trailer Co.....	8
Auto Engine Works.....	62	Milwaukee Tank Works.....	49
Auto Salvage Co.....	62	N	
Auto Spring Repair Co.....	60	National Cash Register Co.....	43
Auto Wrecking Co.....	62	National Rubber Filler Co.....	53
Automobile Accessories Co.....	63	National Wire Wheel Works.....	47
Automobile and Accessories Exposition.....	55	New York Lubricating Oil Co.....	56
B		Norma Company of America, The.....	9
Baird Equipment Co.....	61	O	
Bearings Service Co.....	60	Olympian-Motors Co.....	60
Berno Co., A. J.....	60	P	
B. & M. Mfg. Co.....	65	Panvar Co.....	59
Boe Co., H. M.....	54	Paro, H. G., Co.....	3
Breco Electric Co.....	54	Phillips Engineering Co.....	61
Brunner Mfg. Co.....	7	Pondelick Bros.....	56
Bustner Co., Chas. H.....	63	Pruyn Ball Bearing Works.....	61
Butler Mfg. Co.....	62	R	
Buttum Tool Co.....	55	Reliance Co.....	49
C		Redden Motor Truck Co.....	—
Cassidy Co., Edward A.....	—	Insert 33, 34, 35, 36	
Inside Front Cover		Romort Mfg. Co.....	4
Catelain, Andre G.....	62	Ross-Gould.....	—
Chicago Baling Press Co.....	61	S	
Chicago Solder Co.....	51	St. Paul Welding & Mfg. Co.....	62
Commonwealth Edison Co.....	53	Scaife & Sons Co., Wm. B.....	59
Curtis Pneumatic Machinery Co.....	39	Schaler Co., C. A., Front Cover	—
D		Schrader's Son, Inc., A.....	55
Dearborn Truck Co.....	—	Simplicity Wheel Co.....	60
Defender Auto Lock Co.....	59	Sprague Mfg. Co., E. H.....	47
Detroit Auto Radiator Co.....	62	Standard Oil Co. of Indiana.....	—
Detroit Weatherproof Body Co. 61		States Chemical Co.....	—
Dunton Co., M. W.....	54	Sterling Engine Co.....	—
E		Storm Mfg. Co.....	58
Elgin Motor Car Corp.....	60	Sunderland Machinery & Sup- ply Co.....	62
Ever Tight Piston Ring Co.....	39	T	
Federal Sign System (Electric) 53		Twitcheil Gauge Co.....	57
F		U	
Flexlume Sign Co....Back Cover		United Engine & Mfg. Co.....	56
Forbes, J. P.....	63	Universal Battery Co.....	—
G		Universal Industrial Corp.....	—
Ganschow Co., William.....	58	V	
Garden City Spring Works.....	63	Vanderpool Vulcanizing Co.....	58
Gill Mfg. Co.....	6	Visible Gasoline Dispenser Co.. 58	
Globe Mfg. Co.....	5	W	
Graham Roller Bearing Co., The.....	60	Wagner Specialty Co.....	63
Greb Co., The.....	61	Warshawsky & Co.....	62
Greer College of Motoring.....	62	Webber & Co., P. H.....	58
H		Western Electric Co.....	41
Haney & Co., J. H.....	63	Weston Electrical Instrument Co.....	10
Harton & Co., Inc., Thos. J.....	57	White Star Refining Co.....	45
Harvey Spring & Forging Co.....	45	Wiggins, J. B., Co.....	—
Haywood Tire & Equipment Co.....	—	Willard Co., The.....	56
Hobart Bros.....	57	Williams Fdry. & Machine Co.....	—
Holmes & Bros., Inc., Robert.. 59		Wilson, K. R.....	61
Howell Co., The W. H.....	54	Z	
I		Zinke Co.....	4
Imperial Brass Mfg. Co.....	—	J	
Inland Machine Works.....	60	Jenkins Vulcan Spring Co.....	58
Iowa Novelty & Brass Wks....	62	Johnson Gas Appliance Co.....	—

REX Automobile Jack for Garage and Private Service

Engineered to Perfection

High Powered, Quick in Action and made to last regardless of Hard Usage.

Because

Constructed entirely from high grade Heat Treated Steel and Malleable.

It rolls on four good strong wheels and a mere boy can lift any car.

Because

As you start to lift the REX rolls under instead of remaining stationary.

Two in One

See the nose which is put there to hook under the axel and Rex Jack it up when the wheel is off.

REX JACK COLLAPSED

Safe

No Springs, No Cogs, No Ratchets, but Automatically locks at any height, thus Insuring Safety at all heights.

Glides under the lowest part of any car even though they be equipped with Bumpers or Extra Tires, and raises to a height of 20½ inches without blocking.

Friends

Thousands in use and not a single complaint but Hundreds of Compliments. As a Time Saver it has no equal and will pay for itself any busy week. Ask any user.

Stocked by your Accessory Jobber.

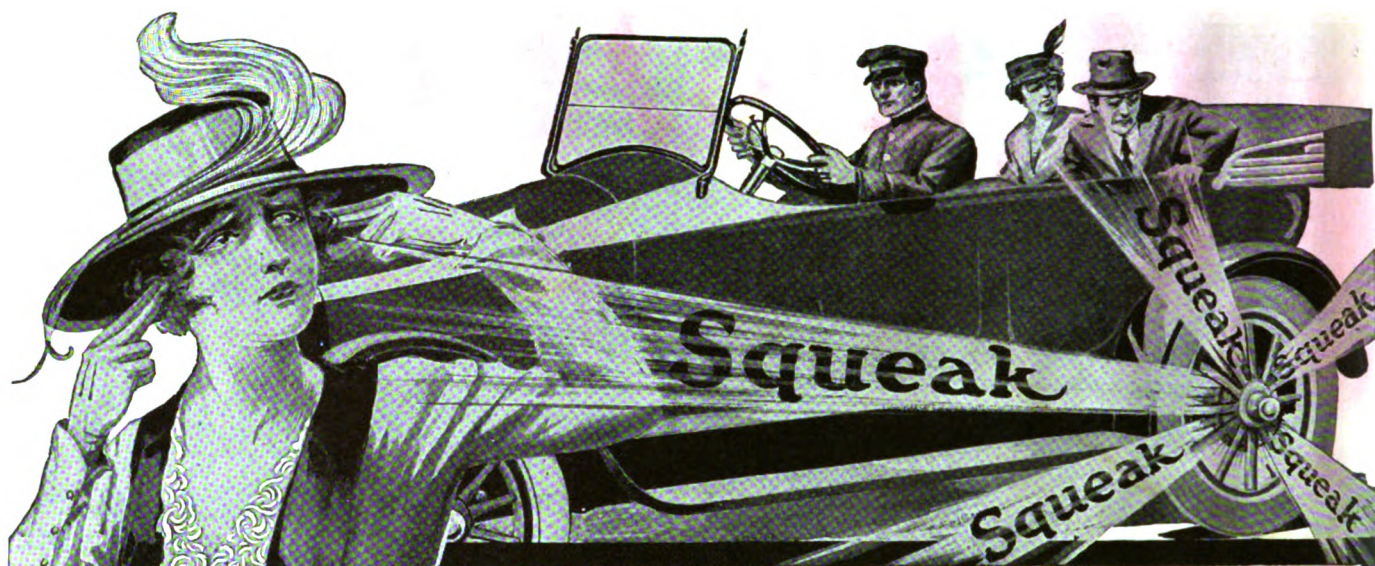
Weight 47 lbs. List Price \$20.00.

**SOME DAY YOU WILL BUY
THIS TIME SAVER**



REX JACK RAISED

B. & M. Manufacturing Co.
5810-14 So. Wood St. CHICAGO, ILL.



Stop that squeak with

CORK INSERT BRAKE LINING

FOR ALL CARS OTHER THAN FORDS

SQUEAKING brakes are a nuisance. Car owners detest them. The public hates them. It's a sign of inefficiency, too, and a danger signal. Means hard, slippery linings—linings that may fail to hold in the emergency.

There's no longer any excuse for squeaking brakes. Cork Insert Brake Lining **absolutely prevents squeak**. It never gets hard or slippery. It produces smooth, positive braking action to the last mile of use.

Cork Insert Brake Lining also is grab and slip proof—oil and grease proof.

It gives **sure** control of the brakes and **longer wear**.

Every time you hear a squeaking brake think of Cork Insert — **it stops the squeak**.

Practically all jobbers handle Cork Insert—most garagemen and dealers in accessories sell it.

Advance Automobile Accessories Corporation
Dept. H-7, 56 E. Randolph St., Chicago, Ill.

The Two Cork Insert Winners For Fords

Stops the grab, slip, chatter in
Ford transmission



**\$3 per
Set of 3**

**Keeps the Ford fan
fanning and the
engine cool**



\$1

**For 1917-18 Fords
85c for all earlier models**



TIRE-DOH Dealers always keep busy!

You will be assured of profitable business by recommending and selling TIRE-DOH to your customers.

Your customers will want it because TIRE-DOH saves them money, annoyance and helps conserve the rubber supply.

Most economical—easy to use. Place your order with your jobber.

As an exhibitor we cordially invite you to attend
THE AUTOMOTIVE & ACCESSORIES EXPOSITION
Municipal Pier, Chicago, Sept. 14th to 21st
And will be glad to furnish you with Complimentary Admission
Tickets upon request

\$.50 size
\$1.00 size

Send for TIRE-DOH
Sales Helps

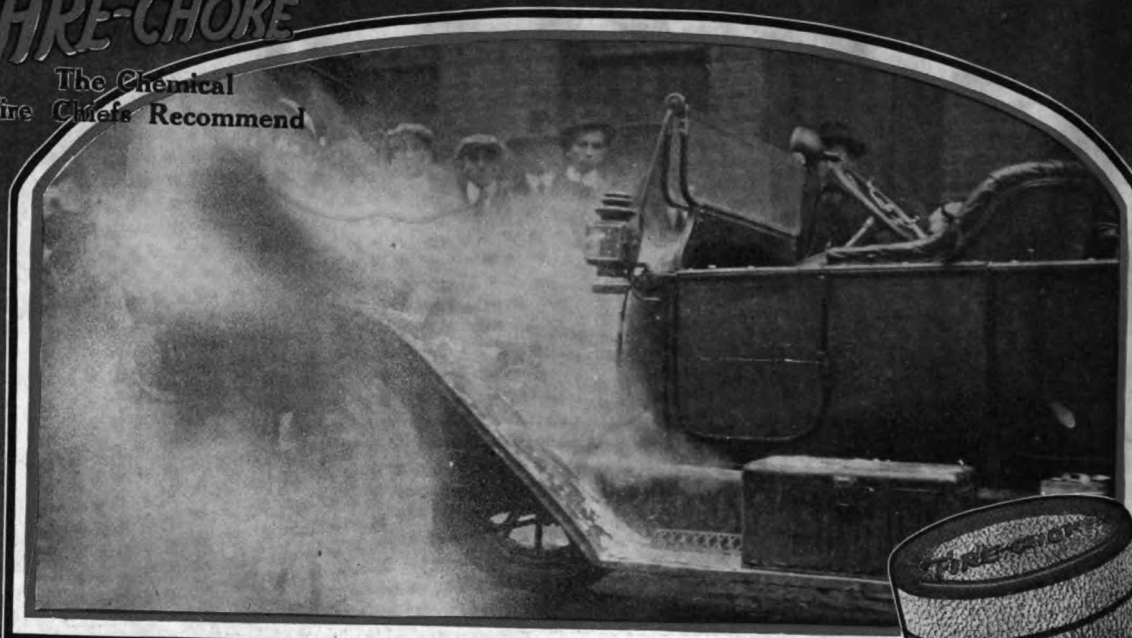
TIRE
The STANDARD TIRE



-DOH
REPAIR OUTFIT
STRETCHES
WITH THE
RUBBER

ATLAS AUTO SUPPLY COMPANY
680 W. Austin Ave.
CHICAGO - ILL.

FIRE-CHOKE
 The Chemical
 Fire Chiefs Recommend



One Handful of Fire-Choke Put Out This Blaze in Two Seconds

A can of gasoline was poured under the hood—a lighted match thrown in. The flames leaped high in the air. One handful of Fire-Choke doused over the blaze and the fire was out. No damage, nothing to do but brush out the harmless powder that remained. The car started up as if nothing had happened.

Fire-Choke is a dry chemical fire annihilator which, when exposed to intense heat forms a blanket of carbon dioxide gas instantly smothering the blaze. It is particularly effective on gasoline and oil fires. Fire chiefs call it the best for automobile protection.

It contains no acids or harmful ingredients. It does not cake or deteriorate with age. Anyone can apply it. It fits on the car in a neat bracket, always there when you want it.

Special Offer to Dealers

Although it has been used successfully for years, Fire-Choke is now seeking national distribution for the first time. The dealers who handle it say it is a quick seller, because it gives the car better protection at less than half the cost of mechanical extinguishers.

Sold in two sizes retailing at \$3.50 and \$5.00.

We want distribution in your town. Fill in this coupon so that we may tell you of our special offer to dealers.

FLEXLUME SIGN CO.

(Sole Distributors of Fire-Choke)

Niagara St. and Auburn Ave.
 Buffalo, N. Y.

I want to know more about FIRE-CHOKE

Name _____
 Street _____
 City _____ State _____
 Dealer or Jobber _____
 If convinced of its sales possibilities
 I would probably order _____
 From _____ Dist. _____
 A. G. & A. D.

AMERICAN GARAGE & AUTO DEALER

Published Monthly
118 So. Michigan Ave.
CHICAGO, ILL.

SEPTEMBER

1918

Vol. 9 — No. 9
10 Cents the Copy
\$1.00 Per Year



SHALER

5 Minute Vulcanizer



Round Units
for Punctures

Oblong Units for
Cuts and Tears

Mends Tubes in 5 Minutes

Complete (With 12 Patch and Heat Units) \$1.50

The Vulcanizer, 6 Patch and Heat Units of round shape for punctures and 6 of oblong shape for long cuts and tears are included in the outfit. Each unit is complete—ready to use. No gasoline, acid, cement or flame required.

The Patch and Heat Unit is placed over the puncture—the vulcanizer clamped in position and a match applied. *In 5 minutes* you have a perfect, lasting, "feather-edge" repair.

The SHALER 5-Minute Vulcanizer sells itself. You only need to place the display case on your counter or in your window.

The 12 Patch and Heat Units that go with the outfit are soon used up—and the motorist comes back to you for more—at 75c a dozen.

This repeat business pays you a good profit and brings motorists to your place regularly, who will also buy other goods!

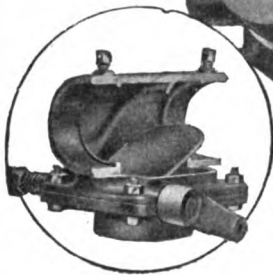
Place Your Order With Your Jobber Now!

Don't delay! The enormous demand for SHALER 5-Minute Vulcanizers has exceeded our factory capacity to make deliveries. We are building a large 3-story addition to our plant—but to make sure of prompt shipments—place your order with your jobber now—specifying date of shipment desired.

*Catalog describing the complete line of SHALER Vulcanizers
for Motorists and Tire Repair Shops—Sent FREE on request.*

C. A. Shaler Company, 359 Fourth Street, Waupun, Wis.

Sectional view,
showing pat-
ented gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

Keep your engine fit—

Nip trouble in the bud

Don't overlook the little engine troubles. They soon develop into big ones. Know what your engine is doing, and it's easy to keep it right. Put a G-P Muffler Cut-Out on your car. It accentuates the purr of the engine and warns against power wastage. The G-P calls attention to operating defects that escape the unaided ear. It cuts cost by saving power.

The G-P Muffler Cut-Out is built simple and strong. Gases exhaust fully with no possibility of back-pressure.

It literally blows the carbon out of your engine. Carbon cannot accumulate. Made in two parts, permitting quick and thorough access to interior. Gives complete cooling relief to the motor. Put one on and know at any time what your engine is doing. It will save gas and increase power.

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285 Madison Ave., New York City

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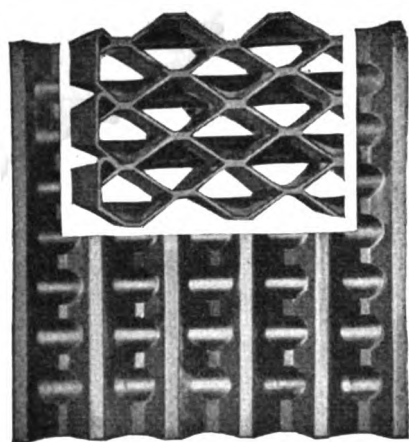
The G. Piel Co., Inc. Long Island City, N. Y.

The G-P Muffler Cut-Out

S P E R Y

TUBULAR-HONEYCOMB

RADIATORS



Showing tubes pressed in side of water wall and combination including honeycomb design. Carries 25% more water. Lighter in weight. 35% more efficient. Our Engineering Department at your service—write or send blue prints and obtain quotations.

Don't fail to see our exhibit at the National Truck, Tractor and Accessories Show on Chicago's \$5,000,000 Pier, September 14th-21st. Write us for tickets.

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J. I. Case Threshing Machine Co.....Racine, Wis.
Aulson Tractor Co.....Waukegan, Ill.
Huber Mfg. Co.....Marion, Ohio
Aultman-Taylor Machinery Co.....Mansfield, Ohio
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TRUCKS

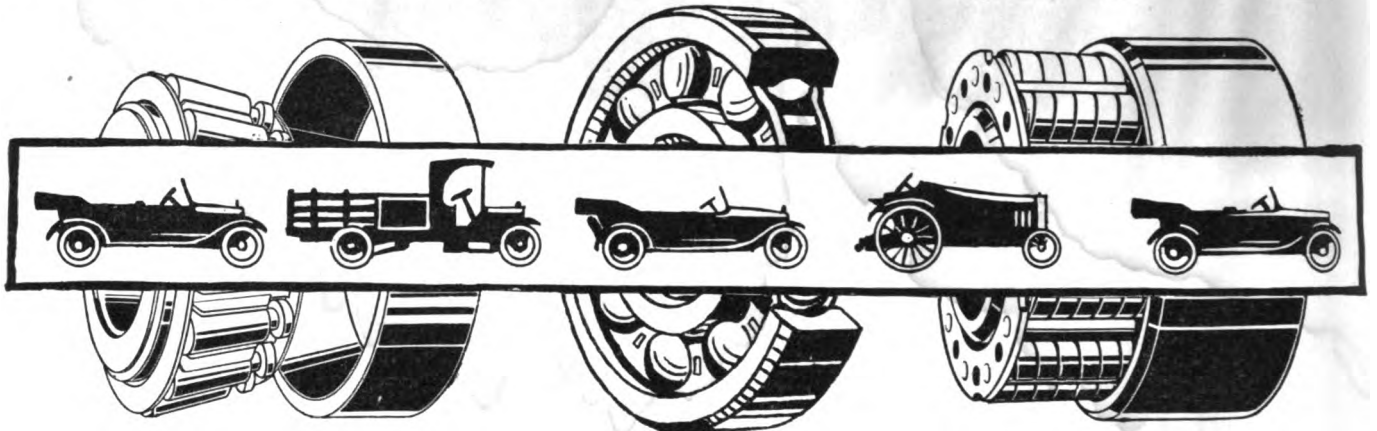
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Kelly-Springfield Motor Truck Co., Springfield, Ohio
Dayton Motor Truck Co.....Dayton, Ohio
Four Wheel Drive Auto Co.....Clintonville, Wis.
Indiana Truck Co.....Marion, Ind.
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Hooven Radiator Company
519 W. Monroe St. CHICAGO, ILLINOIS

BEARINGS



TIMKEN NEW DEPARTURE HYATT
for any make of
motor truck, motor
car or tractor ever
manufactured

TWENTY-TWO BRANCHES

New York
 Detroit
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Boston
 San Francisco
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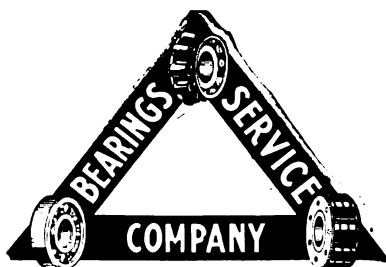
Seattle
 Minneapolis
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 Dallas

Cleveland
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 Rochester

Philadelphia
 St. Louis
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Pittsburgh
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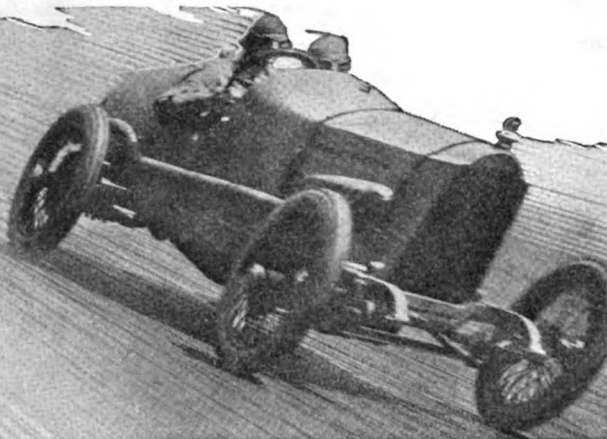
Authorized Distributors in 500 Other Cities



BEARINGS SERVICE COMPANY

Getting More Miles from Your Gasoline

by Ralph DePalma



"For a number of years I have been making a careful study of motor performance and fuel economy.

"My work has been carried on in conjunction with the engineering department of various well-known automobile manufacturers. The part that I have taken in various speed events has been almost entirely in connection with this engineering work. * * *

"As every motorist knows, one of the big problems of recent years has been that of economy. The fuel that we are obliged to use has gradually, yet consistently, deteriorated in quality.

* * *

"Practically no carburetor has been marketed for passenger cars that will handle this heavier gasoline in a manner to allow the motor to get full efficiency from the gasoline used; i. e., part of the fuel entering the motor is unused, and carbon deposits result. * * *

"The problem confronting engineers, therefore, has been one of discovering some method whereby the gasoline could be gotten into the cylinders in a form that would insure a combustion of every atom.

"In my engineering experience I never discovered a way to approximate this until I was first induced to give ECCOLENE a trial. This happened seven months ago, and I must say that the results that I have had are the only reasons why I am issuing this statement.

"It is my sincere belief that the use of ECCOLENE will be a great boon to motor drivers. I have experimented with it in practically all types and sizes of motors. I have also used ECCOLENE in some of my racing cars. The results have always been the same—freedom from carbon—clean spark plugs at all times—greater

Special—Above illustration shows Ralph DePalma in his twelve-cylinder racing car. Since the accompanying article was written, Mr. Ralph DePalma, as is generally known, won the annual Memorial Day race at Sheephead Bay, New York, using Eccolene-treated gasoline. Mr. DePalma holds all world's speed records from six minutes to six hours.

Bellevue, Ohio—New York City Test Run

A recent test of ECCOLENE was made when 10 new six-cylinder cars left Detroit from the factory for New York City. At Bellevue, Ohio, ECCOLENE in proper proportion was added to the gasoline; and regardless of the fact that the motors were new and somewhat stiff, cars with ECCOLENE-treated gasoline showed a decided economy over those using plain gasoline. Following is a complete summary of results:

RECAPITULATION OF TRIP FROM BELLEVUE, OHIO, TO NEW YORK CITY, 651 MILES.
FROM 4-24-1918—8 A. M. TO 4-26-1918—9 P. M.

Eccolene-Treated Gasoline

CAR NO.	GASOLINE CONSUMED	MILES PER GALLON
1.....	59½	12.6
2.....	50	15.6
3.....	55	13.7
4.....	53	14.2
5.....	51	14.8
Average Mileage per Gallon.....	14.2	
Gasoline Consumed.....	268½ Gallons	

Cars Using Plain Gasoline

CAR NO.	GASOLINE CONSUMED	MILES PER GALLON
6.....	75	10
7.....	62½	12
8.....	66	13.4
9.....	68½	11
10.....	64	11.5
Average Miles per Gallon.....	11.5	
Total Gasoline Consumed.....	326 Gallons	

Gasoline saved on the trip by the use of Eccolene—38 Gallons.

Increased mileage—23.4%.
Cost of Eccolene 3½ Qts., at \$7.00 per Gal.—\$5.83.
Savings in Gasoline, 38 Gals., at 26½¢—\$10.25.
Savings less cost of Eccolene—\$4.42.
Pistons of cars using Eccolene were almost free from carbon; the others were considerably carbonized.



(Signed)

acceleration—motor performance better in every way; and with carburetor perfectly adjusted there is a worth-while saving in the cost of gasoline."

Ralph DePalma

* * * * *

What Is ECCOLENE?

ECCOLENE is a scientific compound composed of several oils, and is added to gasoline in a proportion of one ounce to five gallons with the average four-cylinder car, and two ounces to five gallons with cars of six or more cylinders.

Through a complex process termed decolization ECCOLENE makes gasoline vapor more thoroughly combustible under compression in the motor cylinders. By decolizing

the gasoline vapor ECCOLENE transforms a large proportion of the carbon-forming elements; at the same time it assists the process of lubrication.

Thus we get a vapor that leaves no waste—no residue—practically every atom of the gasoline is burned. And the elements in the fuel that would ordinarily be wasted are converted into power for driving your car.

Best of all, ECCOLENE not only saves gasoline but also reduces carbon—increases power—reduces overheating—lessens smoke and noise, and produces better acceleration.

Not An Explosive

ECCOLENE is positively non-volatile, and should be compared in no way to picric acid or ether—two highly powerful volatiles which render gasoline much more explosive, and are also harmful and dangerous to use. ECCOLENE is positively non-injurious to any metal. Test ECCOLENE with litmus paper and prove for yourself that it contains not even a trace of acid.

Results Are Guaranteed

We positively guarantee that ECCOLENE will give you a better performing motor—reduce carbon troubles and save gasoline. We guarantee the increase in economy to be at least 25%.

Your dealer, garage or supply store carries ECCOLENE and will recommend it to you. If for any reason you cannot buy ECCOLENE conveniently, fill out coupon and secure your can by mail prepaid.

Price
1 Quart \$2.00
1 Gallon 7.00
For the convenience of truck fleet owners, ECCOLENE is also put up in five-gallon cans.

Sales Department

Edward A. Cassidy Company, Inc.
283 Madison Ave., New York City

THE ECCOLENE COMPANY

Manufacturers

DETROIT

MICHIGAN

Dealers: Write or wire for our money-making proposition



Dealers, Supply Stations and Garages will find ECCOLENE a most profitable specialty. Write or wire for prices and terms.

The Eccolene Co.
Detroit, Michigan

Enclosed find \$.....

for the..... size can of ECCOLENE.

Money to be refunded if I am not entirely satisfied with results.

Name.....

Address.....

What you can next Liberty Loan

Read this carefully—then ACT

THE three Liberty Loan issues already successfully floated have been put over by the win-the-war spirit of the American people.

In connection with the great work of awakening and quickening to action the spirit of war sacrifice which has been the greatest factor in the success of Liberty Loans it would be impossible to put too high a valuation on the splendid voluntary work of American business men, bankers, labor leaders, and moulders of thought in all professions and occupations.

The very success of this volunteer leadership in creating enthusiasm has shown the desirability of organized methods for increasing its usefulness. And particularly to suggest to those leaders who feel that their circle of action is relatively small the enormous amount of good they can do as a whole *if each no matter how small or great (relatively) his sphere may be, will act with enthusiasm and system.* The great factory or store, society or club, church, or other organization with, say 5000 employees, members, or audience, does a great work in "selling" the Liberty Loan idea to such an aggregation. But that work is fully matched in aggregate importance by a hundred such institutions whose average payroll, membership, or audience, comprises only fifty persons each.

The nation has much other work to do. The Liberty Loan drives are necessarily carried through largely by volunteer work. In consequence they must be limited to specific brief periods for the actual subscription to the bonds.

THESE brief sharp campaigns have the advantage of building up white-hot waves of enthusiasm, but it is extremely difficult in such periods to secure close contact with *all* the wage-earning and money-making units of the public and especially to

bring home personally to each individual the important serious personal relation which he or she should have to the war and to the successful financing of it.

To the accomplishment of that great end it is now proposed that the leaders of thought and action in America and especially the *employers of labor*, great and small, whether in store or factory, whether engaged in production or distribution,

hold a meeting of your employees shortly previous to the Fourth Loan Campaign, not to take bond subscriptions but to arouse serious enthusiasm for the forthcoming Loan.

WHERE organizations are small, as for example small stores, similar organizations in the same or related lines of business can be invited to participate in one meeting. As for example, all the garagemen in a small city, or all those in a given section in a large city, might get together in one meeting. But it would be a garagemen's meeting. In such cases it would usually be wise to keep related trades together.

Whether the audience be great or small, every effort should be made to "stage" the meetings effectively, to make them interesting and instructive and above all to give *employees themselves* an opportunity to speak, to discuss, to suggest, to enthuse their fellow employees.

"Win-the-War" Meetings need not be limited to gatherings of employees. They can be equally effective if organized as "town meetings"—or by clubs, societies, churches, lodges or similar institutions. Leadership, organization, and a definite program will work wonders.

to NOW to help the

It is not essential that such meetings be called Liberty Loan meetings—they would better be announced as “Win-the-War” meetings, and above all it should be made clear that no attempt will be made at these meetings to secure or accept subscriptions for Bonds or money for any purpose whatever—but in all the speaking and discussion attention should be largely devoted to the forthcoming Loan.

The Fourth Liberty Loan Campaign will begin on September 28th.

All of the preliminary meetings should be held not earlier than September 10th and not later than September 25th, unless there are special circumstances which would make an earlier or later meeting expedient.

THE LIBERTY LOAN BUREAU has prepared a booklet setting forth “Suggested Programs for Meetings to Prepare for the Fourth Liberty Loan.”

They have asked us as publishers of a business paper to bring this suggestion for patriotic service to the attention of our readers and to urge its hearty adoption by all stores, factories, employers of labor in any capacity, societies, clubs or organizations of any kind who can arrange such meetings.

We have been furnished with copies of the booklet giving “Programs for ‘Win-the-War’ Meetings—and will send a copy promptly to anyone signing the coupon below and mailing it to us.

The signing of the coupon is your pledge to hold such a meeting either of your employees or of some similar group which you can bring together previous to the Fourth Liberty Loan Campaign and your pledge when received will be turned over to the Liberty Loan Bureau and officially acknowledged.

Such meetings organized in the “Win-the-War” spirit will not only help tremendously to insure 100 per cent subscriptions to the Fourth Liberty Loan among employees of industrial and commercial concerns, they will do more than almost any other one thing could to develop among all ranks of the public the stern spirit of sacrifice and the necessity for loyal, constant, steady service of each and every one in the great national work of victory for the cause of Liberty and Democracy.

They will serve to educate and make clear to all the vitally important way in which work and sacrifice here in our midst help and sustain the work of our fighting men “over there.”

This is an opportunity for every American business man to do a great and helpful work for the Fourth Liberty Loan and one which will help win the war.

There is plenty of time for efficient action. There is no time to lose in preparing for that action.

AMERICAN GARAGE & AUTO DEALER

Sign the Coupon Mail it to

American Garage & Auto Dealer
116 So. Michigan Ave., Chicago

**Get the Book
Hold Your Meeting
and
make it a
“hummer”**

This space contributed to the winning of the war by
AMERICAN GARAGE & AUTO DEALER

I pledge myself to organize and hold a “Win-the-War” meeting previous to the opening of the Fourth Liberty Loan Campaign in order to help float the Loan.

Send me †..... copy of Liberty Loan Committee Booklet giving suggestions for Programs for such meetings.

Signature

Position or Title

*Firm

Street No.

City

State

Date

* If a Society, Club or similar organization give name here.

† If more than one copy is desired state number.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

REX Automobile Jack for Garage and Private Service



REX JACK COLLAPSED

Engineered to Perfection

High Powered, Quick in Action and made to last regardless of Hard Usage.

Because

Constructed entirely from high grade Heat Treated Steel and Malleable.

It rolls on four good strong wheels and a mere boy can lift any car.

Because

As you start to lift the REX rolls under instead of remaining stationary.

Two in One

See the nose which is put there to hook under the axel and Rex Jack it up when the wheel is off.

Safe

No Springs, No Cogs, No Ratchets, but Automatically locks at any height, thus Insuring Safety at all heights.

Glides under the lowest part of any car even though they be equipped with Bumpers or Extra Tires, and raises to a height of 20½ inches without blocking.

Friends

Thousands in use and not a single complaint but Hundreds of Compliments. As a Time Saver it has no equal and will pay for itself any busy week. Ask any user.

Stocked by your Accessory Jobber.

Weight 47 lbs. List Price \$20.00.

**SOME DAY YOU WILL BUY
THIS TIME SAVER**



REX JACK RAISED

B. & M. Manufacturing Co.
5810-14 So. Wood St. CHICAGO, ILL.

Index to Advertisements

A	K
Adams & Elting..... —	Kennedy Car Liner & Bag Co. 59
Advance Automobile Access- ories Corp. 62	Keys Piston Ring Co. 56
American Accessories Co. 59	Kimball Tire & Rubber Co. —
American Bolt & Screw Case Co. 57	
American Floor Surfacing Ma- chine Co. —	L
American Machine Products Co. 50	Lawrence & Co., L. 58
American Oil Pump & Tank Co., The 51	Lawson Co., The F. H. —
American Technical Society. —	Liberty Loan 6-7
Aske Automatic Voltage Regu- lator Co. —	Lourie Mfg. Co. 54
Atlas Auto Supply Co. —	
Auto Cape Top Co. 58	M
Auto Engine Works 58	McDaniel Rubber Co., Leo. 53
Auto Salvage Co. 58	Marvel Carburetor Co. 47
Auto Spring Repair Co. 56	Marvel Machinery Co. —
Auto Wrecking Co. 58	Miami Trailer Co. 61
Automobile Accessories Co. 59	Milwaukee Tank Works —
Automobile and Accessories Exposition —	
	N
B	National Cash Register Co. 43
Baird Equipment Co. 57	National Rubber Filler Co. 48
Bearings Service Co. 4	National Wire, Wheel Works. 49
Bermo Co., A. J. 56	New York Lubricating Oil Co. 54
B. & M. Mfg. Co. 8	Norma Company of America, The 9
Boe Co., H. M. 50	
Breco Electric Co. 52	O
Brunner Mfg. Co. 49	Olympian-Motors Co. —
Buettner Co., Chas. H. 59	
Butler Mfg. Co. 58	P
Buffum Tool Co. 51	Panvar Co. —
	Paro, H. G. Co. —
C	Phillips Engineering Co. 57
Cassidy Co., Edward A. —	Pondelick Bros. 54
..... Inside Front Cover	Pruyn Ball Bearing Works. 57
Catelain, Andre G. 58	
Chicago Baling Press Co. 57	R
Chicago Solder Co. 47	Reliance Co. 50
Commonwealth Edison Co. —	Redden Motor Truck Co. 45
Curtis Pneumatic Machinery Co. 37	Romort Mfg. Co. —
D	S
Dearborn Truck Co. —	St. Paul Welding & Mfg. Co. 58
Defender Auto Lock Co. 55	Scaife & Sons Co., Wm. B. 55
Detroit Auto Radiator Co. 58	Schaler Co., C. A. Front Cover
Detroit Weatherproof Body Co. 57	Schrader's Son, Inc., A. 51
Dunton Co., M. W. 52	Simplicity Wheel Co. 56
	Sprague Mfg. Co., E. H. —
E	Standard Oil Co. of Indiana. —
Eccolene Company 5	States Chemical Co. —
Elgin Motor Car Corp. 56	Sterling Engine Co. —
Ever Tight Piston Ring Co. 37	Storm Mfg. Co. 50
Federal Sign System (Electric) —	Sunderland Machinery & Sup- ply Co. 58
F	T
Flexlume Sign Co. Back Cover	Tungsten Mfg. Co. 39
Forbes, J. P. 59	Twitchell Gauge Co. —
G	U
Ganschow Co., William. 54	United Engine & Mfg. Co. 52
Garden City Spring Works. 59	Universal Battery Co. —
Gill Mfg. Co. 45	
Globe Mfg. Co. 41	V
Graham Roller Bearing Co., The 56	Vanderpool Vulcanizing Co. 55
Greb Co., The 57	Visible Gasoline Dispenser Co. 55
Greer College of Motoring. 58	
	W
H	Wagner Specialty Co. 59
Haney & Co., J. H. 59	Warshawsky & Co. 58
Harton & Co., Inc., Thos. J. 53	Webber & Co., P. H. 54
Harvey Spring & Forging Co. 10	Western Electric Co. —
Haywood Tire & Equipment Co. —	Weston Electrical Instrument Co. 55
Hobart Bros. 53	White Star Reining Co. —
Holmes & Bros., Inc., Robert. 53	Wiggins, J. B., Co. 52
Hooven Radiator Co. 3	Willard Co., The 52
Howell Co., The W. H. 55	Williams Fdry. & Machine Co. —
	Wilson, K. R. 57
I	Z
Imperial Brass Mfg. Co. —	Jenkins Vulcan Spring Co. 56
Inland Machine Works. 56	Johnson Gas Appliance Co. —
Iowa Novelty & Brass Wks. 58	Zinke Co. 45
J	

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

Our Advertising Contest	26
Letters Promote Personal Contact and Swell Profits.....	26
Every Employer Can Help the Nation and Help Himself Under This Plan	26
Women and Accessory Sales.....	27
Build Up Your Following on Confidence.....	27
Commercial Hysteria	27

GENERAL

The Harvest Time for Accessories.....	11
Don't Tell Your Trade How Good You Are—Prove It.....	12-13
Accessory Sales Expert Becomes Profit Adviser to Our Readers	13
Moving Machinery Feature of Automotive Exposition.....	14
National Shows Cancelled, Car Production Cut in Half Automotive Merchants to Replace Old Style Retail Car Dealers	15
More Service Stars	15
Patriotism and Profit Factors in Rural Motor Express Lines	16-17
ACCESSORIES, by M. E. Faber.....	18
Champion Firm Has Neat Display Case for Spark Plugs	19
How to Save Millions Is Conference Purpose.....	19
White Stripe Trade Mark Ford Transmission Lining	19
Tungsten Cabinet Helps Sale of Spark Plugs.....	19
Manufacturer-Dealer Helps	20-21
Howe Manufacturing Company	20
Tungsten Manufacturing Company	20
Jenkins Vulcan Spring Company	21
Flexlume Sign Company	21
Miami Trailer Company	21
Automobile Accessories Company	21
Amazon Firm Buys O'Neil Tire Accessory Business.....	21
Fine Automotive Advertisements Used in Small Newspaper Space	22
Highways Transport Committees Help Solve Man- Power Problem	23
Fire-Choke Sells Rapidly as Accessory Man Shows It	23
Accessory Jobbers Cancel Show.....	24
Owners Say Business Needs Use of Passenger Vehicles "Service" and "Quality" Keynotes of Successful Ma- chinery Concern	26
Advice on Window Displays.....	29
Fuel-less Sundays Restriction Probably a Temporary Measure	30
Transport Labor Problems Go to Highways Committee Unusual Business Conditions Require Conservation of Labor	31
Separate Advertisements Help Market Used Cars.....	31
Motor Tradesman in City Sells Trucks to Farmers.....	32-33
Alcohol May Help Out Any Gasoline Shortage.....	33
Additional Piston Ring Functions.....	33
Cash Sales Only Rule Adopted by New Tire Firm at Wheeling	34
Design and Not Candle Power Makes Good Electric Signs	35
Edgar Hobbs, in Hospital, Asks Word From Friends Extension of Rural Motor Express Urged Upon Chi- cago Tradesmen	36
War Demands for Rubber Require Fewer Tire Sizes	38
Store Door Delivery Plan to Ease Freight Trouble.....	38
Penlings from the Pen of Dike, by C. H. Wooden.....	40
Passenger Car Has Big Part in National Life of Country	40
Win-the-War Spirit in Business Letters.....	48
Red Cross Asks Men to Join Overseas Drivers.....	48

DEPARTMENTS

How to Make the Shop Pay	28
Mechanical and Engineering Problems.....	42
Accessories and Garage Equipment.....	44-46
Buyers' Reference	60
Index to Advertisements.....	8

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"NORMA" PRECISION BALL BEARINGS

(PATENTED)

Quality — a thing sought after by every car and truck builder—a thing intangible, almost indefinable, but the most desirable element in a car or truck. One thing, however, is sure—quality must be consistently uniform throughout every part, every accessory, and every part of every accessory. There can be no minor flaws in the perfect jewel of high quality.

"NORMA" High-Quality Bearings are the standard bearings in those high-quality magnetos and lighting generators which are found so consistently good as to be the standards on high-quality cars and trucks. "NORMA" Quality explains.

Be Sure—See That Your
Electrical Apparatus
Is "NORMA" Equipped.

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Why—



IT'S MONEY in your pocket when you can establish a reputation for rapid service among car owners in your neighborhood.

That is one reason why you should push Harvey Springs

Besides rapid service, the product you sell must be of good quality, honestly made.

That is another reason why you should push Harvey Springs

A product that has made a name for itself and has gained the good will of car owners is much easier to sell.

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You will generally find that a product in which you, yourself place absolute confidence a product you feel sure of, is easy to dispose of at a profit.

And that too is a reason why you should push Harvey Springs

Satisfaction to car owners — satisfaction to dealers — that is the ideal combination.

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THERE'S A HARVEY JOBBER NEAR YOU — Write us and we will send you his name and address, and our latest catalog, giving complete specifications of over 900 different styles of Springs.

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Harvey Spring & Forging Co.
922 17th Street
Racine, Wisconsin

AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX. No. 9

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September, 1918



Don't Tell YOUR Trade How Good You Are— *PROVE IT*

Don't you recall when you were a boy, how you and your pals stood on the edge of the brook or river throwing pebbles into the water? And don't you remember that you wondered in amazement every time that the pebble started many ripples of increasing size on the surface of the water. Perhaps you were the kid who had the "best wing." Your stone probably went the farthest and caused the most commotion.

And so it is in business.

"Many ripples" of satisfaction can be created if you will aim far and right. Like with the ripples—one ripple on the water starts an adjoining ripple. YOU can start many contagious ripples of satisfaction among your present and prospective customers by giving GOOD service.

* * *

Automobile dealers, garagemen and repairmen have fallen into the costly practice of "harping about their good service" without actually applying it to practice.

An employer of men cares more about what the prospective employee can do, than he does about the claims as to the ability of the employee. *Money is not earned on recommendations but by performances.*

Several weeks ago a manufacturer of an automobile accessory made a vacation tour in his car of some of the western states and came back much disgruntled at the obvious lack of service, of courtesy, and interest, which are common faults with some road garage owners—not all—who imagine that they can "hoodwink" the tourist into giving him any old kind of service.

It seems that this man—and he had a perfect right to complain—had to have some work done on his springs. Disgustingly he was compelled to visit several garages and repair shops before a place could be located—and it wasn't a garageman which finally got the business, but a blacksmith—that took enough interest in his trouble to offer to remedy it.

The blacksmith landed the business because he wanted it, not because he could do the work as some of the garages solicited could have done it also, but his manner was infectious, pleasing and friendly. He didn't drive business away, but attracted it.

All of which leads up to the main point of this article

—DON'T TELL YOUR TRADE HOW GOOD YOU ARE—PROVE IT!

There's a vast difference between preaching what you are and practicing what you preach. But it isn't very hard to do the latter if you will keep on doing it and strive each day to do YOUR very best.

Don't play your TRADE for "suckers." Give some people credit for knowing more than you do. It never pays to filch your trade. Sooner or later the public will get wise to you and will go elsewhere, and it is your own fault if you help make profits for your competitors rather than for yourself.

When a crippled car is brought up to your door, step out briskly—say "hello" to its occupant in a manner that shows there is a smile behind your greeting. Tell him that you're the proprietor—ask what the trouble is—look the car over thoroughly, as perhaps you can locate other trouble which means added profit. Then offer to charge equitably or fairly, remembering that it's GOOD SERVICE and HONEST TREATMENT that will BRING this man back and OTHERS who are his friends.

If it's a hot day and he looks warm, invite him inside where it's cooler. Let him sit by the electric fan—give him some attention—everybody else is as human as you are, and appreciates being noticed. If your office is "spick and span" you need never be ashamed to have anyone inspect its contents.

Your customers will form a much better opinion of you if they can see that you are up to date, progressive, courteous, efficient. While your customers are waiting to have their cars fixed up—sometimes a job only requires a few minutes—let them look over some of your TRADE JOURNALS. In this manner you can acquaint them with the latest and best accessories on the market, and make them receptive for a sale.

PRACTICE WHAT YOU PREACH. Prove to your trade that you are an honest merchant as well as an honest worker.

Make your garage or place of business one of the "welcome spots" on the road.

Label your workshop so that it will be known for FAIR PRICES, HONEST WORK, and SATISFACTION. The garageman and automobile dealer who

early acquires these practices is wisely building his business on PERMANENT FOUNDATIONS.

Placard the roads all around with "WELCOME" business cards. Give your business some identity. Then when people come to you for information as well as for having work done, be prepared to give them "road and hotel" information, as who is so well qualified as you.

No two customers are alike any more than you and your competitors are alike. Each has a different temperament, possibly a different car, and a "different sized" pocket book. But get this and hold onto it—EVERY CUSTOMER LIKES ATTENTION, COURTESY and EFFICIENT WORK and he who doesn't get it will most surely go elsewhere.

After you have overhauled the car, or made needed repairs, take a sponge or cloth and wipe the car off if its dusty. Attention to little details is quickly appreciated.

Then when Mr. Customer is ready to depart, ask him if he is entirely pleased—tell him that you appreciate his business, and that you hope he and his friends will come back some time again. Why not also ask him to register in your book of "satisfied customers"? Such a book, with its names and addresses would look very convincing to any other business visitors, and moreover, would help you to develop a profitable follow-up or mailing list.

Mark these words well: "DON'T TELL YOUR TRADE HOW GOOD YOU ARE—BUT PROVE IT!"

Accessory Sales Expert Becomes Profit Advisor to Our Readers

M. E. Faber, of Shaler Organization, Conducts Department to Help Solve Merchandising Problems

During the month of August, the editor of the AMERICAN GARAGE & AUTO DEALER received a letter from M. E. Faber, advertising manager of the C. A. Shaler Co., which was sent from Cabot Lodge, Sturgeon Bay, Wis. At that time Chicago was experiencing quite a hot spell and Mr. Faber, who was accompanied by his wife, was unkind enough to say: "This is the life. While Chicago has been driving the thermometer above the 100 mark, we have had to call for extra blankets."

With this issue we are pleased to announce the appointment of Mr. Faber as one of the associate editors of the AMERICAN GARAGE & AUTO DEALER, who in his spare time will give our readers the benefit of his experience and information on merchandizing problems.

One of Mr. Faber's pet hobbies is the small-town automotive dealer, whom he agreeably terms a merchant.

Mr. Faber is splendidly equipped for this task. He has traveled far and wide. He has stopped at the country cross-roads and talked to the small-town dealers and garagemen. He has the knowledge and fitness to write in a manner that will prove inspiring and instructive. In brief, he is familiar with YOUR problems.

Through his skill and acquaintance with market conditions, supplemented by an efficient organization, Shaler vulcanizers have been introduced into every state of the United States.

So that our readers may become familiar with the selling principles which have made Shaler's success possible, but which principles are merely every-day practices when applied to the sale of accessories, Mr. Faber has gladly promised to "unfold" himself.



M. E. Faber.

Moving Machinery Big Feature Of Great Automotive Exposition

Industrial Show on Chicago's Municipal Pier Has Approximately 175 Exhibits of Tractors, Trucks and Accessories

With approximately 175 exhibits, including tractors, motor trucks and accessories of all kinds in place, the Automotive and Accessories Exposition, one of the greatest industrial shows ever held in this country, opened on Chicago's \$5,000,000 Municipal Pier Saturday afternoon, the 14th, to continue until September 21.

The world's largest pier, more than a half-mile in length, has been converted into a veritable fairy land for this mammoth industrial exposition. Great painted canvases depicting American industry in its earliest days up to the present enclose the sidewalls of the pier, while the spirit of the times predominates in the decorations in the form of the flags of the Allies.

At the opening a large crowd had the opportunity of seeing practically all the machinery, including tractors, moving under its own power. It is believed that this is the first time such a demonstration has been attempted at any automobile or mechanical exposition.

Among the many interesting features of the show are several devices that are said to help in the conservation of gasoline. Also in the accessory exhibit are to be found many new inventions that should make a wide appeal to motorists, especially in view of the curtailment

in the manufacture of passenger cars, for motor car owners have begun to realize that they must conserve their present vehicles.

The objects of the exposition are to bring the tractor, truck and accessory manufacturers into closer relationship with the jobber and dealer; to emphasize the present importance of these elements of the automotive industry that are commercial and wartime necessities, conservers of man power, units of transportation, and to educate the general public to the great industrial advantages of the farm tractor and the truck.

Meetings of the State Brotherhoods of Threshermen from five neighboring states will be held September 19 and 20. There will be a great Threshermen's banquet on the evening of September 19, and a fine program has been prepared. E. E. Parkinson of The American Thresherman, Madison, Wisconsin, has been doing wonderful work in insuring the success of this part of the Exposition.

The Threshermen's banquet will open with the patriotic song "America," and then an address of welcome will be made by a speaker of national reputation, the choice of whom is now being made by the Chicago Chamber of Commerce. B. B. Clarke will make response to the address of welcome.

J. B. Bartholomew, president of the Avery Company, and a leading figure in the National Implement & Vehicle Association, will deliver a speech in connection with a topic which is nearest and dearest to his heart, that of winning the war, and tractor men the country over will be well repaid the time and effort to come to Chicago simply to hear this great talk of Mr. Bartholomew's.

W. H. Newsom will give an address on "What Organization Has Done for Threshermen." L. A. Hardin will talk on "Patriotism from the Threshermen's Standpoint," and J. W. Dove has as his timely subject "Recognizing the Importance of the Threshing Industry."

In view of the importance to the tractor industry of the 28,000 threshermen who have been invited to attend the exposition, there is not the slightest question as to the success of this part of the program. In connection with this meeting of five State Brotherhoods of Threshermen, a movement is under way to consolidate into a National Organization of Threshermen.

The management of the exposition announces that all soldiers and sailors in uniform will be admitted free on any day of the show.

National Shows Cancelled, Car Production Cut in Half

With a view to further co-operating with the governmental authorities in conserving labor, fuel and transportation, the Directors of the National Automobile Chamber of Commerce at their meeting, September 3, in New York City, unanimously voted voluntarily to recommend to the members the abandonment during the period of the war, of the automobile shows held annually for 18 years in New York and Chicago.

The makers present felt that the holding of automobile shows would be inconsistent with the patriotic obligations of the industry.

At its previous meeting the N. A. C. C. working with the War Industries Board, voluntarily agreed to curtail production of passenger cars to 50 per cent of the production of 1917, and recommended that all automobile companies take on war work as rapidly as it is obtainable.

Automotive Merchants to Replace Old Style Retail Car Dealers

AUTOMOTIVE MERCHANTS—in every sense of the term—must carry on the task begun by the "car dealers" who were the pioneer retailers of the automobile industry.

It is every bit as inconsistent in these days for the man or firm selling automobiles to confine his or their business to that one line as it would be for a man selling suits of clothes to refuse the profits offered by handling shirts, ties, underwear and socks.

If every automobile dealer and garage owner will look at this question in a broad way he will realize that he has been neglecting a plain commercial duty unless he has enlarged, or is preparing to enlarge, his business into the class where he can be truly termed an **AUTOMOTIVE MERCHANT**.

To use the clothing business as a comparison. Suppose that a man who has been selling passenger cars in a city of 10,000 inhabitants starts on a cross country tour with a man friend. Their car is mired in one of the many mud holes on American roads and their suits, shirts, collars and ties are practically ruined before they get the car back onto firm roadway again.

When they reach the next city, one about the same size as their own home town, they stop at a clothing store to buy new suits of clothes. After a bit of examination of the stock they select the suits they want and pay for them.

What would be their opinion of the store proprietor if he were to tell them he could not sell shirts, collars and ties to them but that they must take the suits under their arms and then go out to hunt for some other store to buy the additional things they needed?

It is quite likely that they would be convinced that the clothing store owner was a mighty poor business man to refuse the certain profits that would come to his establishment from the sale of shirts, collars and ties. And they surely would be justified in such a belief—if it would be possible to find a clothing store whose owner was so blind to his opportunities as to neglect or refuse to carry such articles in stock.

But according to this reasoning, and it seems logical, is the man or firm that handles passenger cars only in any different class in a business sense than a clothing store man would be if he neglected, or refused, to sell the articles that are just as much in demand as accessories are in the automobile field?

With the ever-growing demands of the Government for cloth the price of clothing is rising and the materials from which clothes are made are becoming scarce. Clothing merchants are preparing to make up the loss of profits from decreased sales of suits by selling more

shirts, collars, ties, underwear and socks—which are the accessories of their trade.

The men or firms handling passenger cars are in a similar position so far as the supply of their stock in trade is concerned. The Government has announced that war needs for steel require a vast cutting down of passenger car production and at least one big producing concern has announced that it will not make any more passenger cars after January 1 next until the war is won.

So not alone are car dealers required to get into the accessory business by commercial standards but are likely to be forced into the sale of enlarged lines unless they wish to calmly accept the loss of their businesses.

To again turn to the clothing business for a comparison: All enterprising clothing merchants carry in stock not only dress-up clothes for those who want them but working garb for farmers and mechanics.

There may be a few of the car dealers in the largest cities who might not be able to sell enough tractors and farm electric systems to make these lines produce sufficient profits. But even these men or firms should enlarge their lines to include truckmakers, trailers and trucks. These are to the city business life in the same relative position as the overalls and other working clothes that are used by the men who do the hard labor.

But the car dealer in the smaller places, or even the larger ones that are located close to farming districts, has a larger duty. He should sell tractors and farm electric systems in addition to marketing truckmakers, trailers and trucks for all of these must come into ever-growing use on the farms as the demands of war decrease the available supply of human labor.

More Service Stars

THE LLOYD & MAYER AUTO COMPANY

Hugh N. Lloyd, Proprietor

Fort Collins, Colorado, August 19, 1918.
American Garage & Auto Dealer,
Chicago, Illinois.

Gentlemen:

The writer expects to close this garage for the period of the war, to engage in the business of helping our Country in a more direct manner. Our employees go with the boss.

Under the circumstances we must ask you to stop our subscription to your very worthy publication.

Yours very truly,
(Signed) HUGH N. LLOYD.

Patriotism and Profit Factors In Rural Motor Express Lines

Truck Dealers Can Help Their Country and Establish New Customers Through Promoting Service

Fortunate indeed is the man who can do his share toward winning the war and at the same time lay the foundations for a substantial business for himself.

Such is the happy condition of the truck dealer who has the opportunity of engaging in the Rural Motor Express movement that is now sweeping over the country with ever-increasing momentum. The need of adding to our transportation facilities never was so apparent as it is today.

The railroads are overburdened with the vital work of hauling food products, fuel, raw materials and all that the soldiers use in their great enterprise. The motor truck and the automobile can lend a helping hand to the railways and are doing so to an increasing extent every day. The question is: "How can this aid be utilized to the best advantage?"

The Rural Motor Express goes far toward answering this query. Generally speaking, it forms the connecting link between the farm and the market. The idea has been approved by the Highways Transport Committee of the Council of National Defense, which requested the co-operation of the National Automobile Chamber of Commerce. Samuel A. Miles, manager of the big automobile expositions in New York and Chicago every year, has taken charge of the work, and is being assisted by F. W. Fenn of the National Motor Truck Committee, with headquarters at 7 E. Forty-second street, New York City.

Manager Miles has been successful in getting in touch with truck dealers in all parts of the country, and reports that they are showing a wide interest in the movement. He has prepared literature describing the proposition, which will be sent to any dealer who desires information. Already he has mailed out 20,000 copies of a booklet entitled: "Rural Motor Express Lines" and the same number of a leaflet which describes the organization of such lines for the benefit of that community. More than 30,000 cartoon posters have been sent into districts where the Rural Motor Express idea is taking root.

Dealers can obtain from Manager Miles sufficient copies of these pamphlets which they can mail to the farmers in their localities, and thus familiarize the producers who would afterwards use the motor trucks for the transportation of their products.

These booklets contain complete information about the system, including rates of charges; sales arguments to be employed in spreading the idea among farmers; how to survey the motor express route, data concerning number and size of trucks, advertising plans, operation of the service and other details.

Briefly stated, the Rural Motor Express is intended to haul farm products from the farm to the city, deliver city goods to the farmer, and collect and deliver goods along the route. It requires only a moment's thought to appreciate how much such an express would save both the farm and the city in special trips.

It would relieve railroads of short hauls, reach territory not touched by railroads, develop back country regions, advance the price of land in such communities, and prove a great boom to both the producer and the consumer.

While assisting in this very important work, the truck dealer who takes part in the enterprise will build up a profitable business for himself, for, of course, as trucks are needed for this kind of transportation, he will add to his own opportunities.

The fact that the government is enthusiastically behind the movement will also tend to give it great impetus. Progressive business men who form the chamber of commerce, and merchants' associations of trading towns and agricultural sections will welcome the chance to help push the Rural Motor Express. Local truck dealers, by laying the proposition before these business organizations, will receive valuable assistance in promoting such an enterprise. The up-to-date dealer will carefully lay out a promising truck route in his neighborhood, and make several trips as a test. He will find no difficulty in gathering a load to haul from the farm, nor will he find it hard to collect a load destined for the farm from the town merchants.

After demonstrating the possibilities of the Rural Motor Express, he should have no trouble in interesting capital in the organization of a company to carry on the business on a proper scale. *Of course, he would sell the trucks to this company.*

F. W. Fenn, who is in charge of the work of the National Motor Truck Committee, says that reports from all parts of the country show that the Rural Motor Express idea is spreading rapidly and meeting with great success.

In Omaha, Nebr., the Ford Livery Co. has made an initial purchase of three large trucks, these to be the forerunners of a fleet of forty trucks, to be used in hauling freight to and from Omaha in the surrounding country.

Operating out of Mexico, Mo., are seven trucks which cover two routes, one of 35 miles and one of 20 miles. These lines supply the farmers with goods from town and haul from the farm the loads of fruits and vegetables that otherwise would wait for the uncertain delivery of the farmer or, what is more likely, go to waste.

A wholesale grocery house in Mexico makes regular deliveries to its customers within a radius of 35 miles.

As another instance of the value of the Rural Motor Express is the fact that one milling company calls for all grains of its farmer customers. So popular have these motor lines become that there is a demand for others already.

Down in Tennessee, Mr. Fenn says, motor lines have been organized at Chattanooga and Nashville for long distance hauling into the country, and the bringing back of food crops to the city.

The Dixie Highway Association has organized a bureau to increase the efficiency of truck operations, a marketing committee for the disposal of food products, and also a school for training chauffeurs for the rural motor express lines, which now has a register of 100 students.

In Ohio, the operators of the rural motor lines haul live stock as well as foodstuffs. Out of Chillicothe, there are three rural lines which carry food into the markets, and merchandise back to the farmer.

Away out in South Dakota is a rural motor line that runs from Deadwood to Sundance, Wyoming. Experience shows that they can deliver goods by truck between these two towns in five hours, *whereas by railroad it would require from three to five days*. In Mason City, Ia., rural motor routes range in length from 80 to 150 miles, and are making a great hit both among the farmers and merchants in the town. Leading business men of Mason City have organized a \$50,000 company, all paid in, for hauling produce, poultry, and dairy products from the farms.

The indications are that rural motor lines will prove very popular in hilly or mountainous country. L. G. Spencer, of Lurton, Arkansas, is president of a company that handles a route of 100 miles into the surrounding country: "Our line," he said, "is in a mountain country where there are no railroads, and we are doing a fine business. We are rapidly making the mule-teams back numbers for hauling, and will soon need more trucks. We will soon be handling United States mail for the twelve post offices along our route."

Kansas is welcoming the rural motor line idea and 2,000 sets of literature have been sent out by the Automobile Trade Association of Kansas to the dealers throughout the state. The Kansas lines now in operation are handling live stock as well as foodstuffs.

"Flint, Mich.," said Mr. Fenn, "is going at the matter in a very effective manner. They are tabulating every farmer in the state, his transportation needs and where located. The routes take in Adrian, Alma, Ann Arbor, Bay City, Clarkston, Clio, Davidson, Detroit, Pontiac, Saginaw and various other points. These routes are grouped and served by different lines. They plan to give each farmer along the route a kind of show card, to be displayed in the windows, similar to that used by express companies, informing the passing truck that he has goods to ship."

"In Webster and Dudley, Mass., rural motor lines are

running to Worcester, Norwich and Southbridge carrying merchandise both ways. A line is in operation from New York to Stamford, Conn. Up in Maine there is much activity.

Writing to the committee of which Mr. Fenn is the executive, Senator B. A. Cummings, of Idaho, said:

"There is great need of the establishment of a route between Arbon Valley and Michaud, an Oregon Short Line station eight miles west of this city. There are several hundred settlers in this valley, and it is estimated that they will raise 500,000 bushels of wheat this season. Their crops as well as all their supplies have to be hauled from 20 to 30 miles.

"The handling of this grain represents a big problem this fall, due to the fact that they will have an unusually large crop, and if the farmers have to devote their time to hauling it, it will mean curtailing the acreage for next year by perhaps 50 per cent."

The committee has requested truck manufacturers to render Senator Cummings assistance in the direction of supplying motor transportation, and a line will probably soon be in operation in that section.

One of the great benefits of the operation of rural motor lines will be the encouraging of farmers to increase their crop acreage. In the past, when the farmer found that it was impossible or unprofitable to market all the output of his farm, the next year found him likely to decrease his planting. This is not surprising, as nobody likes to see the fruits of his labor go to waste.

Let the farmer realize that all of his grain, vegetables, and fruit will find transportation to market and he will be willing to raise all that his land will produce.

A rural motor line will furnish the farmer with an outlet for his products. It will relieve the farmer of the worry and labor of getting his produce to market, which is a big item in these days when farm help is scarce and getting scarcer on account of the military draft. The farmer cannot be hauling crops and working on his fields at the same time.

Any agency which steps in and relieves him of a share of this labor is doing a patriotic task.

The truck dealer can fill a very important niche in the agricultural world by taking an active part in the transportation of farm products to market. For doing so he will be entitled to liberal compensation and this will be forthcoming as the movement for rural motor lines expands. Experience has shown that the Rural Motor Express has made good, and benefited all classes concerned.

Of course, the boss has many failings. But credit him with doing his best. He hired you. You may be the whole show. But who guarantees the "gate"? There's just one man can keep raising your pay. Look him square in the eyes and ask him about it—when you shave. Whose job are you after—the man ahead of you or the one behind? Look out! You may get it. You're always in business for yourself. It might pay you to give the boss a bargain now and then.

—Hardware Dealers' Magazine.

ACCES\$SORIES

BY M. E. FABER.

"Oh, most of 'em go in my advertising file," said a garageman in reply to my question as to what became of the circulars that manufacturers supply for distribution to automobile owners. And he pointed to the box that served him for a waste paper basket.

Just another case where the back end of the garage, the repair shop where the strong arm work is done, overshadowed the selling end where the easy profits are.

Fortunately, this particular man is an exception. There are enough in his class, however, to do a great harm to the trade as whole. It is because of dealers like this that at least one prominent jobber has instructed his salesmen to stop taking orders from all dealers for the sales helps that most manufacturers are anxious to furnish.

He admits the value of these "silent salesmen" to dealers who will use them, but he says frankly that he does not want to be a party to the tremendous waste represented by circulars, display signs, etc., which are never used. He can't discriminate between the dealers who will use this help and those who ignore it.

Circulars Will Produce Profits.

Possibly the fact that circulars, for instance, don't cost the dealer any actual cash, blinds him to their value. He sees them only as so much printed paper instead of from the standpoint of the profits they will produce.

However, the mechanical cost of a circular does not represent its value any more than the mechanical cost of a twenty dollar bill represents twenty dollars. Both must be put into circulation before a profit can be shown.

When the manufacturer of a salable accessory is willing to stand the expense of elaborate selling helps because his experience has shown that they do actually sell the goods they describe, surely a dealer can do far worse than to increase his profits by distributing them.

Even without the wonderful advantage of personal contact and acquaintance with customers, and without any opportunity to show their wares except by means of printed matter, many concerns are doing a continually increasing business by the use of circulars alone. As an adjunct to a business which has the confidence and goodwill of its patrons, they are invaluable.

Since it is seldom that a customer will pick up circulars that lie on a counter, and since circulars exposed in this

manner are often ruined by being thrown on the floor or used for scratch paper, a more effective method of distribution should be used. Where a mailing list is available its use is obvious.

But the accessory dealer who sells cars should not confine his mailing of accessory-selling literature to his own car customers. For this purpose he ought to have as complete a list as possible of *all* the car owners in his vicinity.

There is no better way for a dealer to keep before the motoring public than by regular mailing of accessory circulars bearing his name. Use one-cent stamped envelopes and put in as many different kinds of circulars as they will carry. Generally about half a dozen circulars may be included.

Experiment on 100 Names.

If you have never tried this scheme, experiment on a list of 100 names. Try it once a month. It may take an hour or two some evening. There is nothing to lose and a great deal to gain. You will not have many customers making special trips to say "I want one of those tire repair kits" but you will find that when they do come in you are very likely to hear, "Say, Bill, what do you know about this idea of vulcanizing my own tires?"

The circular does not make a direct sale but it does open up an opportunity for you to talk business. It gets your name before the prospect in a dignified, effective manner. Often it is the link that connects you with other advertising that has already practically made a sale.

Do not waste circulars—they will win business and profits. Write to manufacturers of the lines you handle and tell them how many circulars you will use—do not ask for more than that. When you get them, put them to work immediately. Circulars that lie around on your counter do not do anybody any good. The information they contain may be old to you but it is new to your customers.

During the coming months it is more important than ever before that you use every effort to make profits by methods that you have passed up heretofore.

Remember—

"THERE ARE MORE FLYSPECKS ON A WINDOW THAN ON A WINDSHIELD,"
and keep moving.

ACCESSORIES

WHITE STRIPE TRADE MARK FORD TRANSMISSION LINING.

The Advance Automobile Accessories Corporation is introducing a transmission lining for Ford cars that can instantly be identified by a white stripe running along the center.

In a folder headed, "Another Triumph of America's Genius," this lining is described as setting a new standard in transmission fabric quality. A treatment has been worked out by the chemists of the Advance institution, which resists and neutralizes the action of hot oil on cotton fabric. Moreover, a mechanical method of applying the treatment to the woven fabric also has been successfully developed, with the result that White Stripe solution thoroughly saturates every fibre of the lining, making it retain its heat and oil resisting qualities longer than any lining now on the market.



White Stripe lining is to be marketed both in rolls and strips of three to the box. The retail price per box of three, east of the Rockies is \$2.00, and from the roll the retail price is 32 cents per foot.

Further information can be had by addressing the Advance Automobile Accessories Corporation, 56 E. Randolph St., Chicago.

CHAMPION FIRM HAS NEAT DISPLAY CASE FOR SPARK PLUGS.

Dealers that sell AC spark plugs and who order a certain quantity from the manufacturer, the Champion Ignition Co., Flint, Mich., can obtain a very serviceable display case. The case is not only a good one for display purposes but is big enough so that a goodly number of plugs can be kept in it.



The frame of the case is oak and is finished in light oak. It is 3 feet and 3 inches high, 20½ inches wide and 20¼ inches deep. The front and both sides are glass. The Champion concern declares it has proved its worth as a "silent salesman" for many motor tradesmen who have obtained them and put them in their salesrooms.

TUNGSTEN CABINET HELPS SALE OF SPARK PLUGS.

The Tungsten Mfg. Co., Marshalltown, Iowa, has made a big success of its Tung-

sten Spark Plug, because of its thorough and intensive dealer follow up system. Presented herewith is a reproduction of the dealer display cabinet for Tungsten spark plugs so successfully used in getting the attention of motorists.

More than 4,000 of these particular cabinets are now used throughout the United States by as many dealers, which is proof that Tungsten spark plugs are meeting with public favor everywhere.

If you are interested in this cabinet and would like to sell Tungsten spark plugs, the company advises that it will be pleased to furnish its attractive cabinet to any dealer who purchases at least a minimum of 100 Tungsten spark plugs. Further particulars upon request.



The cabinet is finished in walnut, has an attractive stick-up on the top. Dealers report that they have found the cabinet actually produces sales to customers who have gone into stores to buy other articles.

How to Save Millions Is Conference Purpose

The saving of many millions of dollars in materials and even greater sums in the value of time is the purpose of a national conference in Chicago, September 15 to 18, at the Congress Hotel, to which federal and state officials who deal with war and commercial economies have been invited to meet representatives of city fire and police departments and of the delivery services of manufacturers, big department

stores and other commercial concerns.

The meeting, called by the manufacturers of standard tire fillers, has for one purpose formulating a salvage program for the benefit of the public. The tire filler manufacturers will submit the case of the tire filler as being more suitable than air for tire inflation. They claim that the purpose of the conference has the war-time needs and the benefit of the automobile owner in mind, as its program will be directed toward checking a vast waste of labor and materials resulting from blowouts and punctures.

MANUFACTURER - DEALER *Helps*

Tungsten Manufacturing Company

"Tungsten Co-operation" to dealers has always been complete. Not only do we aim to furnish TUNGSTEN dealers with the proper sort of sales ammunition, for presentation to their customers, but we believe in going one step further and educating the general public as to the service to expect from TUNGSTEN spark plugs. To do this, we use movies quite extensively, which we have found to be a very successful method of direct appeal.

Another way that we try to help get TUNGSTEN spark plugs off the dealer's shelves, is to do newspaper advertising in local communities wherein we have TUNGSTEN representatives and we invariably find that this method of co-operation begets business.

Of course, a firm needn't stop here. We get up attractive display cards in several colors; we assist and

show our dealers how to "dress up" windows—in short, we leave nothing undone to boost TUNGSTEN spark plugs—and it must pay—because we have never been so busy.

H. E. WOODWARD, Mgr.

Howe Manufacturing Company

We are continually supplying all motor tradesmen who have accessory departments, as well as garage owners and accessory dealers, with various sales helps such as attractive folders. These folders describe our searchlights, kirk tread brake and transmission linings and fan belts, spotlight, and clamps and brackets for both searchlight and spotlights. In each case the folders are prepared with the name of the dealer printed on them.

We also furnish advertising literature, window transfers, etc.

Another manner in which we help them is by furnishing them with high grade lithographed metal display stands, like the one illustrated by the accompanying cut.



Whenever requests are received we also furnish our dealers with electrotypes for use in newspapers.

We are continually looking toward the interests of the dealer, and on an average of every six to eight weeks send out some form of a dealer mailer.

Bert G. Cochrane, Sales Manager.

Announcement of an early doubling of its manufacturing plant is made by W. E. Bennett, general manager of the Eccolene company. This organization, of which Fred Gumpfer is president and manufacturing manager, has so increased its business of late as to require doubled space to provide for the future.

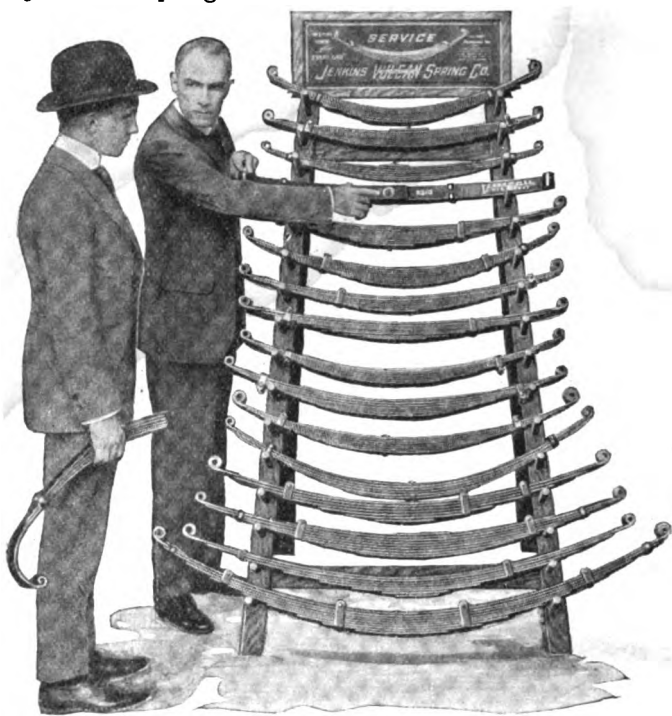


MANUFACTURER-DEALER *Helps*

Jenkins Vulcan Spring Company

Your new department "Manufacturer-Dealer Helps" interests us very much. We hope to derive a great deal of profit from this page.

From the day this business was founded "Service" has been our motto. The most successful plan we have ever evolved is to give a free display rack with an order of 25 or more springs.



We also send our dealers a handsome metal sign to be attached to the front of their stores.

We back our dealers up with trade paper and national advertising and supply them with the usual service such as electro cuts and window transfer signs.

CLINT MCDADE, Advertising Manager.

Flexlume Sign Company

We are in the habit of supplying our sign representatives with sample letters, in many cases arranged to show not only the finish and day appearance of the sign, but the illumination of the letter at night as well.

We also supply them with booklets, leaflets, letter-heads, calling cards, price lists, blueprints of designs, etc.

Amazon Firm Buys O'Neil Tire Accessory Business

A recent development of considerable interest in the tire world is the purchase of the tire accessory business of the O'Neil Tire & Rubber Co. by The Amazon Rubber Co. of Akron. In discussing the matter, General Manager L. J. Schott of the Amazon company stated:

"W. J. O'Neil was the pioneer manu-

facturer in his field, and for over ten years produced a high-grade line of tire accessories which have enjoyed a nationwide distribution and have been decidedly popular with every dealer in the country. The purchase includes the exclusive right to the name "O'Neil," as an accessory trade name, all unfilled orders on hand, and the good will of their trade.

"We realize that there will now be a crying need for dependable tire acces-

We are not in the habit of sending them newspaper electros or display counter-cards, although we sometimes co-operate in enabling them to display advertisements in trade papers or some publication of minor importance.

Another important feature to keep up the interest of our agents is our monthly listing of all agents on the honor roll. Agents are listed in the order of their sales and no agent gets placed on the honor roll unless he has sold a certain volume as to value of signs.

Another help which keeps up the interest, we believe, is the publishing of a little magazine by our company entitled the "Light." This deals with company affairs of general interest and special stress is given all items of interest to the selling force.

R. R. WILEY, Manager of Sales.

Miami Trailer Company

We handle our dealer helps in the following manner:

First we request the dealer to send us a list of automobile owners in his particular territory, this list when received is followed up by forwarding our regular customer's literature and by writing a series of three letters.

We are also assisting dealers by co-operating with them in local newspaper advertising. We have found that this is not only satisfactory to the dealer, but is productive of excellent results for both of us.

W. F. JOLLEY, Manager.

Automobile Accessories Company

We send out circulars quite freely for our dealers.

We have our own traveling men and we furnish them and the traveling men of jobbers with special printed matter, little bulletins, etc. We send out literature of various kinds from time to time, trying to have something new every few weeks.

We also furnish window decorations, display counter cards, newspaper electrotypes, folders, booklets and circulars. At the same time we furnish cabinets to dealers who purchase in gross lots or more.

Our business is growing by leaps and bounds. We have no complaint whatever except to get goods.

J. E. NORWOOD, President.

sories which will enable the car owner to secure every possible mile of service from his tires, on account of the decreased production and the necessity of conserving the rubber supply of the country. We will conduct this new addition to our business on a much broader scale, and under the name of "O'Neil Pioneer Accessories" will place before the trade the highest quality reliners, wing blowout patches, lace-on boots, cementless patches, etc."

Fine Automotive Advertisements Used in Small Newspaper Space

Progressive Merchants Show How to Make Business-Getting Announcements Without Big Expense

The eight automotive advertisements reproduced on this page are all fine ones and none of them required the expenditure of much money.

The same general plans followed by the men or firms that paid for the insertion of the accompanying business-getting announcements can be easily used by motor tradesmen in other cities and towns.

The manufacturers of the cars, trucks, tractors, truck-makers, trailers, farm electric outfits, tires and accessories sold by our readers will be glad to furnish electrotypes for newspaper advertisements when requested. Just write to them, saying you want to do some advertising and give the factory folks the width of the cut you want.

The advertisements reproduced were originally printed in newspapers at Lincoln, Nebraska; Missoula, Montana; Sacramento, California; Tacoma, Washington, and Anaconda, Montana. Similar ones would surely pull profits to the users in any other city or town.

The three at the side were all two 2-column ones, the largest one—telling about the Hupmobile—being 6 inches deep. The Trail Garage used a 2-column space that was 3¼ inches deep. The other four were all single column.



The Cleveland Tractor
If you would do all your farm work quickly, with the least expense, own a Cleveland Tractor.
For Sale by
McCullough-Turner Co.
South Higgins Avenue

Ford Repair Work
EXPERTS TO DO THE WORK BACKED BY MODERN EQUIPMENT, PROMPT SERVICE AND FAST WORK.
Car Washing a Feature At Our Plant
WE ARE EQUIPPED TO HANDLE BATTERY REPAIR WORK, BATTERY INSPECTION AND BATTERY RECHARGING.
McEldowney's Garage
Tacoma's Largest and Most Complete Plant. Main 1792.
14th and A Streets.
Service of All Kinds Under One Roof.

Hupmobile
Durability
Bearing engineers rate the new Hupmobile's rear axle 30 per cent stronger than the weight of the car demands. What is true of the rear axle is true of every part and assembly of the Series "R."
RICE & FORREST
1216-18 K Street
Phone 239

Mr. J. W. Parkhurst
Electrical Expert
recently with eastern factory connections, thoroly familiar with all makes of electrical equipment, is now located at the Motor Inn. Prompt service and parts for all kinds of equipment.
MoToR INN
11th & N

HOOVERIZE YOUR AUTO
When you drive to FLORENCE Drive to the GARAGE
We'll fix your car—we have a first-class mechanic on hand. Oil and grease and storage. Right treatment and reasonable prices.
HOOVER'S GARAGE
J. H. HOOVER, Manager.



Service Is the Magnet That Draws Auto Owners to Us
TRAIL GARAGE Phone 768
On the Yellowstone Trail. 7,000-foot floor space at your command (with service road maps of this state and other free features).

JOE'S GARAGE
Our business is increasing all the time. Your work is done under my personal supervision. My prices are reasonable.
Let me figure with you before you order your work done.
OPEN EVENINGS AND SUNDAYS
JOE BRAUND, Prop.
114 South 9th
Main 1906

Cut Your Repair Costs
The Electric Welding Co. can fix it right on your car.
Carbon burned out of cylinders in short order.
Electric Welding Co.
1219 A St. Phone Main 3720.

Highways Transport Committees Help Solve Man-Power Problem

Successful and Patriotic Efforts of State Bodies Win Praise From Government Officials

The following is authorized by the Highways Transport Committee of the Council of National Defense:

The practically unanimous enactment by Congress of the new draft measure, coupled with the nation-wide movement of the United States Employment Service in surveying the potential man-power of the country, both pointing unerringly to the supreme demand of the hour, man-power to the nation's limit, have driven home the vital character of the activities supplementing these calls upon the country's resources among which are those being daily brought into motion by the Highways Transport Committee, Council of National Defense.

This problem, which is a local one in every state in the Union, down even to the smallest of the political sub-divisions, is being met by the highways transport bodies through the efforts, for instance, of a rural motor truck operator in Colorado who reports that he is daily saving through one route the services of fifty men on the farms at the expense of but three men in the operation of his truck.

This spells increased man-power that food production may be made certain, just as the operation of a return loads bureau in Pennsylvania, that rail congestion be relieved, means coal for the navy, to bunker the ships; and it means an increased transport service for the army in the moving of munitions of war for use by the men in France.

Carry Out President's Views.

The highways transport committees in their work are thus carrying out the views recently outlined by the President in emphasizing "the value of extending our defense organization into the smallest communities." The President's view characterizes as "truly democratic" this system of bringing together the individuals of the country into movements looking to the furthering of the dynamic force which is carrying the nation forward to victory.

The gravity of the situation, and the potential aid of which the Highways Transport Committee is capable in relieving freight congestion, is recognized by Major General George W. Goethals, Assistant Chief of Staff, United States Army, in a letter to the State Highways Transport Committees in which he points particularly to the aid being given by such committees in helping to increase the nation's trans-

portation facilities by the development of efficient and effective highways transportation. Continuing, General Goethals says the work of the Committee "is of great value in that it tends to result in speeding up the delivery of munitions and other army supplies which might otherwise be delayed through terminal congestion during this war time."

Hoover Commends Work.

Further force has been given to recognition of the aims and policies of the Highways Transport Committees along food conservation lines by Herbert Hoover, United States Food Administrator, who, following his recent return from a survey

of food conditions abroad, strongly emphasizes his previously expressed views as to importance of all efficiency possible in the transportation of food stuffs.

Mr. Hoover sees as direct beneficiaries of the efficient use of highways transport of every character the following:

First—the producer, the consumer, and the railroad; second—facilitation of delivery, conservation of labor, and conservation of food-stuffs.

Also, it has been decided that it will be necessary to limit the amount of coal storage that industrial plants would be allowed to accumulate and to carry on hand and to fix an uniform amount for each state.

Fire-Choke Sells Rapidly as Accessory Man Shows It Tells Gasolene Customers About Flame Annihilator and Has to Order New Supply Next Day

Here is the story of how an accessory dealer in a Western New York town is pushing the sale of Fire-Choke, the new fire annihilator marketed by The Flexlume Sign Co., Buffalo, N. Y.:

"It started one Sunday morning," he said. "The boy who usually operates my gasolene tank failed to show up, and I had to do it myself. While I was sitting out there in the shade by the tank I got to thinking of what a good chance this was to tell people about this new dry fire chemical I had just stocked, and I thought I'd take a try at it, so when the next car came along—a fellow I knew pretty well—I said:

"Say, Bill, aren't you taking pretty big chances without any extinguisher on that car?"

"Forget it," he answered. "You're not going to sell me any of those things. They cost too much money. It's cheaper to burn up the bus."

"Hold on a bit," I said. "How much do you think they cost?"

"Ten or fifteen dollars."

"Not much," I answered, pulling out a package of Fire-Choke. "Here's the best extinguisher you ever saw for \$3.50."

"Yes it is!" he comes back. "I can buy as much salt as that for a nickel and it will put out just as much fire."

"All right," I said. "I'm just going to show you what it will do and if you don't agree it is better than anything you ever saw I'll give you a dozen of them."

Converts a Skeptic.

"I dumped about a pint of gas on the concrete and threw a match into it. It made a pretty hot blaze. While he was still grinning at how he was going to put one over on me, I put it out with one handful of Fire-Choke."

"All right," he says, "I'd like to see it work like that on a real fire in a car."

"That's easy," I answered, and I ran out my Ford, dumped some gas over the motor and set fire to it.

"Call that a real fire?" I asked. He agreed that it was.

"Then I put it out just as easily as I had put out the other fire, and started up the motor. There wasn't a bit of damage anywhere."

"That was enough. My man just reached in his pocket and pulled out some money. 'Give me a package,' he said."

"I kept it up all day. Every time a car would drive up I'd switch around to fire extinguishers. Before night I had sold nearly three dozen and I had to wire in next day for a new stock. You see I had no idea it was going to be such a quick seller when I took it on."

Accessory Jobbers Cancel Show Scheduled for Medinah Temple

Decision Announced After Special Committee Consults Secretary of Commerce Redfield at Washington

War conditions have caused the show committee of the National Association of Automobile Accessory Jobbers to cancel the exhibition planned for October 28 to November 2 in the Medinah Temple, Chicago.

The decision to call off the exhibition was agreed to by all members of the show committee, consisting of L. P. Hallady, Streator, Ill., chairman; R. R. Englehart, Davenport, Iowa; W. K. Norris, St. Louis, Mo.; S. F. Beech, Chicago, and George L. Brunner, Utica, N. Y. The committee's announcement to the Association members was as follows:

In consequence of the war condition your committee having carefully reviewed the situation, studied it from the different angles and considering the further fact that by direction of the Board of Directors a committee has just visited Washington for the purpose of ascertaining to what extent the manufacturers may secure raw materials, and what the jobber's course will be in disposing of his goods, and while in Washington the committee conferred with Mr. Redfield, Secretary of Commerce, and among other things sought his views as to the wisdom of carrying on the exhibit. Secretary Redfield's advice was:

"Go slow with your exhibit. In this terrible war we are in, it will require every ounce of ammunition, every bit of energy, every available man, every dollar we can spare to win."

And taking all this into consideration we feel that there is no place for an exhibit or show at this time. On the contrary, we are of the one opinion that anything in the nature of an exhibit or a show should be absolutely discountenanced and discouraged during the war period.

We would also state that this was

the unanimous decision of your committee as early as the date of the meeting and allotment at the Hotel LaSalle, Chicago, August 15, but we felt it wise to await the visit of the committee to Washington, and everything which that committee saw or heard only tended to confirm our opinion in the matter.

Therefore, by virtue of the authority vested in us at the Hot Springs Convention, we do now hereby abandon the whole matter as a patriotic duty and with a view to helping our Government at this time and in your interest as well, and we trust all members will not only sympathize with our acts but share in our views.

It is a source of great satisfaction to your committee, as we know it will be to you, to know that from a financial point of view the exhibit would have been a splendid success as all the

space in the great Temple was subscribed and fully paid for, but, as indicated above, the love of country and patriotic duty must be our first and foremost consideration.

We hereby further direct Commissioner Webster to return all subscribers the amounts which they have paid in, in full, and on behalf of this association we take this opportunity of extending our profound thanks to all who so promptly and enthusiastically supported the enterprise thus far, and with the added hope that when the war is over and the country has assumed its normal condition we may then with your full approval and liberal patronage as evidenced here, carry a novel exhibit of this character on to a pleasant and successful conclusion, as this one must most surely would have been under ordinary conditions.

Owners Say Business Needs Use of Passenger Vehicles

Final returns on the nation-wide investigation conducted by the Haynes Automobile Company, Kokomo, Ind., show that more than 84 per cent of those questioned consider their cars necessities.

In all 1,000 car owners were addressed, and 416 replied, answering the following questions:

- (1) Do you use your car in business?
- (2) What is your business?
- (3) Could you conduct your business as efficiently without a car?

Of the 416 who replied, 350, or better than 84 per cent, stated, emphatically in many cases, that their business would suffer if deprived of their automobiles.

YES (Essential to business).

Merchants	61
Agriculturists and stockmen.....	59
Manufacturers	32
Doctors	28

Business not stated.....	22
Salesmen	18
Real estate dealers.....	16
Livery, garage and auto men.....	15
Bankers	13
Contractors	12
Hotel and restaurant keepers.....	8
Public officials	7
Attorneys	7
Insurance men	7
Railroad executives	7
Buyers	6
Mine operators	6
Engineers	4
Undertakers	4
Advertising men	3
Miscellaneous	15

NO (Not essential to business).

Merchants	19
Business not stated.....	15
Attorneys	5
Executives	5
Agriculturists and stockmen.....	4
Manufacturers	2
Salesmen	2
Hotel and restaurant keepers.....	1
Miscellaneous	13

"Service" and "Quality" Keynotes of Successful Machinery Concern

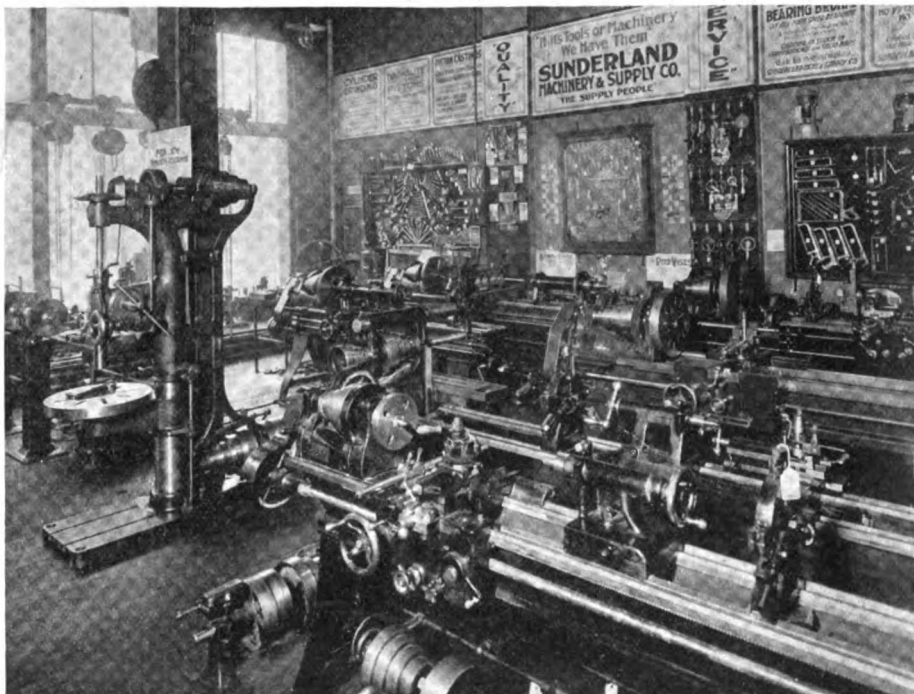
Omaha Firm Has Big Trade in Cylinder Grinding and Furnishes Many Piston Castings to Tradesmen

"Service" and "Quality" make good trade slogans. At least they have for the Sunderland Machinery & Supply Co., 1007 Douglas Street, Omaha, Neb. Well may this firm be proud of its business and clientele, as numbered among its customers are numerous progressive garages and repair shops not only in the state of Nebraska but of many other states.

Every business or industry must have its captain or "guiding star" and in the Sunderland Machinery & Supply Co., John L. Fuchs, known as "John" to his many friends and associates, deserves especial recognition as it is the particular department of which he is manager, catering to the automotive industry, that has shown such substantial growth.

This is the day and time for young men, and Mr. Fuchs is a young man, and in the 8 or 9 years that he has been manager, many changes and additions in the factory have been needed because of the growth of the business.

The accompanying illustrations present a good idea as to the completeness of its machine and tool departments where by catering to the exclusive requirements of garages and repair shops "more" satisfactory work at attractive prices can be had.



View of the Sunderland Salesroom.

This "specialization" is largely responsible for the rapid and increased growth of the business.

"If it's tools or machinery, we have them" is another slogan of the Sunderland firm, which is equipped to do cylinder grinding, and to furnish piston castings of either cast iron, semi-steel, or magnalite aluminum alloy. Inquiries from interested garages and repair shops for the above or any kind of work will be promptly and cordially answered.

"War Savings Stamps mark an epoch in our national life."—Secretary of the Treasury McAdoo.



The Busy Sunderland Machine Shop.

Success depends mostly on yourself. You may be selling a splendid line of cars, but if your organization is weak, if you have insufficient salesmen, if your location is not right, if you neglect advertising and promotion work, if you are not known as a "fair and square business man," you are not going to get the maximum results. And make up your mind to it.

J. H. Newmark.

EDITORIAL REMARKS

Our Advertising Contest

Responses from our subscribers in sending in their nominations for the prizes offered in our advertising contest were so numerous that the judges have requested that announcement of their decision be delayed until the October issue. This will permit a more careful consideration of the advertisements that were submitted for consideration. The names of the prize winners will be given in our October number, when the conditions of another advertising contest will be announced.

Letters Promote Personal Contact and Thus Swell Profits

Motor tradesmen of all kinds should not neglect the use of letters sent out regularly to the prospects in their territories. This is true whether the tradesman sells only passenger cars, or perhaps accessories, or trucks or if he has graduated into the automotive merchant class and sells all the things named as well as truckmakers, tractors, trailers, farm electric outfits and trucks.

One of the points made by Mr. Faber in his article on "Accessories," printed on another page of this journal, is that even without what he terms "the wonderful advantage of personal contact" many concerns are doing an ever growing business by the use of circulars alone. But while perhaps it is true that it is not possible to sell automotive merchandise by circulars alone it is still a fact that letters and circulars sent out regularly will bring many buyers to the man that sends them out. These customers would otherwise not have purchased and thus turned his efforts into profits.

Every Employer Can Help the Nation and Help Himself Under This Plan

On pages 6 and 7 of this issue we publish the announcement of a plan in which under an organized method the co-operation of every employer is requested in order to help in the promotion of the Fourth Liberty Loan. That announcement is worthy of your careful and immediate attention and action.

It is certainly not difficult to see how the energetic carrying out of this plan may produce results helpful not only to the Liberty Loan but to American business.

The tremendous impetus which Charles M. Schwab has given to shipbuilding has been largely achieved by making every individual engaged in the industry feel a personal responsibility for results and a personal pride in helping to make great results possible.

This spirit of accomplishment in the ship-building industry has been brought about by the leaders—the employers—the bosses; whatever you choose to call them; making it a business to come in personal contact with the workers and to inspire and enthuse the men with a sense of the importance of their work for victory in the war—a sense of personal responsibility, and a spirit of teamwork.

The creation of that spirit among the workers of the nation in all lines of activity would be of incalculable benefit to the workers themselves, to employers, and to the nation.

Concretely two of these results would be:

1. To quicken and increase the response to all war measures such as Liberty Loans—War Savings Stamps—the draft—food and fuel saving.
2. It would make the worker feel more keenly his responsibility to do his work (no matter what its character) to the very best of his ability. Make him feel the necessity of sticking closely to his job.

Employers generally should pursue with intelligent enthusiasm the plan of "Win-the-War" meetings proposed as a means to aiding the rapid flotation of the Fourth Liberty Loan. The results of such action will not only be helpful in the Loan drive, they will be permanently helpful to the nation through the development of a keener realization by the worker of the importance and dignity of his individual job and the necessity for personal responsibility and helpful teamwork.

Every employer can be a leader and a center of influence in this work.

The man who operates a small business with relatively few employes may feel that his circle of influence is too small to be worthy of any effort. That is a mistake. It is the aggregate that counts, as the announcement of the plan very clearly points out.

The man who is in a relatively small circle may not hold so pretentious a meeting—it may not be formal or run under parliamentary rules—it may not be especially announced, or accompanied by music and oratory. But the man who will quietly call a dozen employes around him and informally, thoughtfully, lead discussion into win-the-war channels, pointing out the importance to the individual of doing his best in support of Liberty Loans and all other war activities, can do a real service in this way. It can be so well done in no other way. And ten thousand such little meetings would produce an enormous aggregate result.

Whether his opportunity be great or small every American business man should carry out this idea in a definite, systematic manner. The "Program" booklet which is mentioned in the announcement will be found tremendously helpful in its suggestions as to what should be done under any circumstances.

Women and Accessory Sales

With the definite prospect that 4,000,000 men will before long have gone into the service of our country in the work of winning the war, it will surely be a good plan for motor tradesmen who have accessory departments—and all of them should—to try women in their sales forces. While the withdrawal of so many men will perhaps result in some cars being laid up the majority will continue to be used by the women relatives of the men at war. Many of these car operators will be very good prospects for accessories of various kinds and especially for those fittings that make automobiles easier to run and more comfortable as to riding qualities. Women who have already had sales experience in stores should make welcome additions to the profit-producing staffs of many motor tradesmen and could take up the task of selling accessories with very little training and guidance.

Commercial Hysteria

Under the above title Commissioner W. M. Webster of the National Association of Automobile Accessory Jobbers has written some advice to members of that organization which applies to all business men. It was as follows:

Possibly one of the greatest misfortunes that can befall any business is to have the head of the institution seized with what is commonly known as modern commercial hysteria or lack of nerve.

While it is true we are now going through very troublesome times, it calls for every acumen, every atom of nerve and every element of coolheadedness in the operation of business. Therefore, to those who are inclined to become rattled, I would suggest that they sit tight and not rock the boat in the middle of the stream, and if they will pursue this course, eventually things will come out all right, for you can rest assured in the old saying, in war times as well as peace, that there is a silver lining to every cloud, and the sun's rays will strike those who exercise calm judgment much sooner than it will those who in a moment of excitement, can only see trouble in the darker recesses of their every day business pursuits.

In many instances the jobbers are packing up large quantities of materials and shipping it back to the manufacturer. In some instances, it is old, shop worn, obsolete goods that have been out of date for some time. In other cases new goods, marketable in every way, and if the present conditions exist, and restrictions in steel and other metals prevail, the jobber will, no doubt, regret before many days, having permitted this element of hysteria to actuate him and get rid of these goods, that sooner or later will be worth a great deal more money if, indeed, they are at all obtainable.

This is all the result of undue excitement because there are few goods, if any, on the jobbers' shelves in the automotive equipment line that cannot and will not be used either by adjustment or transformation or something of

that sort because history will repeat itself and we are finding in other lines that goods that have remained upon the shelf for years and years and have become obsolete are now taken down, transformed and put in use at good market prices.

The used cars are bound to and will be run and on each succeeding day will be pressed into service in greater numbers, and the longer these cars are run, the more equipment they will require in upkeep and the greater chance for the jobber for not only selling stock that he bought at a moderate price for more profit, but also working off lines of obsolete goods that you have seen time and again when scarcity prevails.

There is another side to this issue; we should not return these goods without first consulting the manufacturer and consequently we should not strip ourselves of stock, for if we have the money to carry it we can make by far more profit out of the goods that are being returned than you could hope to secure from a credit memorandum that you would get on their return.

THEREFORE, AVOID THE COMMERCIAL HYSTERIA.

Building Up Your Following on Confidence

The need of winning and keeping the good faith of customers is one of the most important factors in any business and the following from the Philadelphia Public Ledger brings this out:

"Elbert Hubbard stated: 'We make money out of our friends. Our enemies will not trade with us.'

"This means that the manufacturer or retailer who sells merchandise must render 100 per cent satisfaction to the buyer; if not, he 'does' himself more than his customers.

"An example: Jones and Brown were merchants selling the same goods. Jones did not sell as much goods as Brown, but what he did sell stayed sold. Jones' customers never made complaints of any merchandise which he sold to them. He made it his business to advise a customer, even at the expense of the order, not to purchase this or to buy carefully on that particular style, and in general gave the buyer the benefit of his own experience. On the other hand, Brown did not believe in these tactics; his idea was to sell the goods. His policy was 'get the money.' Brown seldom sold twice to the same person; finally, he worked himself out of business.

"What does salesmanship amount to if all conditions are not equitable and each party to the transaction be the gainer? It means that every one's efforts, from the manufacturer who produces the goods to the clerk who dispatches them, are wasted, and it does not take much to make a sale go wrong.

"Business, as we know, is built upon confidence, and there is no such thing as what was formerly known as 'sticking' a customer. The one who gets stuck is not the customer, but the seller."

How to Make the Shop Pay

Plan Is Devised for Positive Check on All Labor and Materials Used on Repair Jobs on Cars

By E. B. HINRICHSSEN.

The building was about 100 feet wide by 150 feet long and was erected on a corner. They were careful to select streets on which there were no streetcar tracks and where there did not seem to be any possibility of any ever being constructed. There was an alley in the rear.

The entire front on the ground floor and the side for a distance of fifty feet was fitted with large plate glass windows. Those on the front were used for display of accessories and parts and those on the side lighted the offices.

The front door was fairly wide and was in the middle of the building. On the right as one entered this door were the various offices and on the left was first the accessory department and next the parts department. A passageway led directly from the front entry or hallway back along past the offices, accessories and parts departments to the small garage at the rear.

On the side street opening into the garage was an automobile door. Adjacent to it and with entrances from both inside and outside was the elevator. There was also an automobile door at the rear opening into the alley. The outside elevator door and side street door were operated electrically and were controlled from a small office located to one side of them. The other doors were operated by hand.

The sales counters of both the parts and accessories departments were located almost directly opposite the cashier's window. The usual method of making a purchase was to give the order at the counter, receive a bill for the goods, step across to the cashier and pay the bill either in cash or coupons. By this time the goods purchased would be wrapped or packed and would be delivered to the customer when he presented his bill marked paid.

Cashier Takes All Money.

The salesman would, however, accept payment direct if a customer was not familiar with the routine but such receipts were immediately taken across to the cashier. No one else was authorized to stamp a bill as paid, and the paid bills indicated at the end of the day the amount of business done.

The information desk was located close to the front door. There were two private offices, one large general office and the cashier's cage. The heads of the accessory and parts departments had small offices located in their respective domains.

Mr. Brown and Bill had desks in one of the private offices. The other private office was used for board meetings or for anything else it might be handy for.

Bill's desk was not often used. Certain mail passed through his hands and he had the title of general superintendent with his name on the door but he was here, there and everywhere else about the building. If he was wanted in a hurry it was usually necessary to telephone for him, and he might be found in any department. He was continually looking for leaks to stop and improvements to make.

The garage at the rear was arranged for light repair work, washing and as a receiving and delivering room. There was no machinery here and only a few men at work.

The doorkeeper attended to the gasoline and oil with the assistance of a boy. There was a billing clerk located in the small office near the side door and the preliminary and final testers also had desks in this office.

Regular Routine Established.

The routine here was about as follows: A car would drive up for repairs. The door man would attach a numbered tag, giving the owner or driver the numbered stub from it. The car would then be turned over to the preliminary tester, who would make out his inspection report both from what the owner told him and from what he saw himself. The owner usually signed this report before the work was done.

If minor adjustments only were required the tester would make them. If it was something that would take time but did not call for any disassembling, the garage force would attend to it. If it was a real shop job it would be sent to the second floor on the elevator.

The preliminary tester was picked for both his mechanical skill and knowledge, and also his ability to meet and talk with the customer. He had to be able to give an estimate of what a job would cost and give an exact time when it would be complete. He was also in direct charge of the floor men in the garage.

As soon as a job was completed and the mechanics had finished their tests, the car was turned over to the final tester who made a complete test and checked his report with that of the preliminary tester. In case there was anything not right and it was only a minor adjustment, he would do it.

If the difficulty was something that would take time, he would turn the car back to the proper department with his comments and the comments were usually lurid. Not only that, but Bill would get a written report of the shortcoming and the man responsible would be sure to have life made miserable for him for a few minutes. It was not long until "turn backs" came to be a rare occurrence.

Number for Each Job.

After the final test the car was placed on the garage floor and the job turned over to the billing clerk. The preliminary tester would assign a job number to the car as soon as he had finished his work. These job numbers accompanied the cars as they went through the shop and were carried in large envelopes. Into these envelopes went a copy of every requisition, time slip and inspection report.

The billing clerk could take this job envelope and in a few minutes have a comprehensive and complete invoice made up. When the owner called for the car the bill was ready for him, together with copies of the preliminary and final testing reports.

If he wanted to be shown, the final tester would go out with him and let him make his own tests until he was satisfied. Before the car could be released, it was necessary that he hand the door man a house pass signed by the cashier or some one with the authority to sign it.

When the owner paid his bill to the billing clerk the coupon book or cash was placed in a carrier with the customer's copy of the bill and shot into the cashier's cage. The cashier would detach the necessary coupons or make change as required and send the receipted bill together with a house pass back in the carrier to the bill clerk.

Upon receipt of the house pass, the door man would detach the original tag from the car and release the job. The job envelopes were filed numerically and the information in them was very complete. A job register of customers' names arranged alphabetically was also kept in order to give a key to the job file. In case of any come back on the job it was easy to see whether it was just or not and also to fix the responsibility for any errors.

This routine may seem slow but it is not. Properly handled it is very fast and with the various check systems which will be explained in the next article it made errors almost impossible.

Advice on Window Displays Given By Motor Merchandising Expert Outlines Simple Methods by Which to Arrange Exhibits and Capture Profits from Them

Some very good advice on the subject of window displays is contained in the article that follows. It is a portion of the chapter on "Windows" in the volume, "Automobile Business," written by J. H. Newmark, who was a pioneer in the merchandising of motor vehicles and is now advertising manager for the Chevrolet Motor Company.

Anything moving in a window will draw crowds. Striking color combinations as backgrounds will make your display stand out. Brief explanatory cards are good. Do not overlook them.

Study lighting effects. Never allow a light to shine into the onlooker's eyes. A small amount of money expended on window lights is a good investment.

Concentrate attention upon your window. Do not permit a view of the interior of your showroom, as a background detracts from the display in the window. Use some curtain or drapery as a background.

Study the advertising campaign of the factory you represent. Line up your windows with it. Display copies of advertisements simultaneously with their appearance. When your new models come out spend a little money on a big canvas sign. A glaring sign used once or twice a year to announce important events is good business. But it should not be used too frequently or its effect will be lost.

Bunting Will Work Wonders.

You can work wonders with a few yards of bunting, some lumber and a hammer. They are the only stock in trade of a window trimmer—plus originality.

But do not waste your windows. From the street ninety per cent of the automobile salesrooms in smaller towns have every appearance of being a vacant store. Let people know you are alive.

The garage man, as a rule, totally ignores his windows, and for this very reason your accessory display will be doubly effective. For you will have no window-competition.

The same general rules for window dressing apply here, with special emphasis upon concentration. The dealer who does use his windows usually tries to display his entire stock, which is not necessary.

Concentrate upon one or two articles and display them with their

passed your store because you didn't tell him you had the article. If the manufacturer of a warning signal is advertising extensively, let the people know you have his signal. Watch the trade papers, general magazines, and newspapers.

Be consistent. Don't display tire repair outfits at the same time as puncture proof tires.

Use your windows. Keep them well lighted. Change them often.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.



W. J. Slater, New General Sales Manager of Williams Foundry & Machine Co., Akron. He was with the Firestone tire forces many years, being successively manager of advertising, sales promotion and pneumatic tire sales.

prices. Money invested in the work of a professional sign writer is well spent.

Mark Sizes and Prices.

When you display tires, tell the man who looks at them their size and price. When you show a jack, make it hold something up. When you show a tire pump, make it pump—people will stop to look at wheels going around whether the wheels accomplish anything or not.

Name your displays. Price them.

Take advantage of the advertising done by the accessory manufacturer. Many a man has been sold through having seen an advertisement, but has

Minnehaha Falls, immortalized by the poet, Longfellow, and popularized by makers of popular music, are well worth the visit of any motorist who strikes Minneapolis. The cascades claim a sure charm for the visitor. The Falls are maintained in their natural beauty in the heart of the most beautiful part of the town. Minnehaha Creek flows through Longfellow Glen to the Mississippi and this romantic gorge is an ideal place for motor-weary motorists to stretch their limbs.—Automobile Blue Book.

Fuel-less Sundays Restriction Probably a Temporary Measure

Plan Adopted as Safeguard Against Any Possible Gasolene Shortage for Our War Needs

The National Automobile Chamber of Commerce issued the following statement from its Washington office August 29:

"In connection with the request of the Fuel Administration for the discontinuance of Sunday automobiling, motor-boating and motorcycling for mere pleasure, we are told by an official of the Fuel Administration today that the restriction is expected to be necessary only a short time, probably four to six Sundays, which would provide ample increased stocks of gasolene.

"The production of gasolene increased 27% in July over the same period last year, but consumption increased 29%. It was felt that, with the increasing demands from overseas, and some difficulties in transportation, a conservation plan such as outlined is necessary.

A Patriotic Appeal.

"C. C. Winningham, chief of the Gasolene Conservation Division of the Oil Division of the Fuel Administration, said today it was deemed best to make this first appeal one to the patriotism of the owners, and the feel-

ing is general that the request will be complied with by all car owners.

"After the conference between Dr. Garfield and Mark L. Requa, chief of the Oil Division, statement was made that the action was deemed necessary as a safeguard against any possible shortage of gasolene for our war needs. Because of the difficulty of differentiating between the various uses to which automobiles are applied, it is believed the greatest measure of economy could be effected with the least interference with the business of the country through the discontinuance of the use of motor vehicles, motor boats and motorcycles on Sundays.

"Automobile officials view the new order with favor because it will give a further opportunity for motorists to prove their loyalty to the war program. The request is effective Sunday, September 1, and applies to the territory east of the Mississippi River, and includes all motor vehicles except the following:

The Exceptions.

"First. Tractors and motor trucks employed in actual transportation of freight.

"Second. Vehicles of physicians, used in performance of professional duties.

"Third. Ambulances, fire apparatus, police patrol wagons, undertakers' wagons, and conveyances used for funerals.

"Fourth. Railway equipment using gasolene.

"Fifth. Repair outfits employed by telephone and public service companies.

"Sixth. Motor vehicles on errands of necessity in rural communities where transportation by steam or electricity is not available."

NATIONAL AUTOMOBILE CHAMBER OF COMMERCE,

ALFRED REEVES, General Manager.

Transport Labor Problems Go to Highways Committee

United States Employment Director Takes Step for Effective Use of Power or Horse Drawn Vehicles

Recognizing that the vital need for increasing transportation facilities of the country during the war may be realized only through the most effective utilization possible of the highways, the United States Employment Service has instructed its representatives to refer all labor problems arising in this connection to the Highways Transport Committee, Council of National Defense, to which Committee all highways transport problems are being delegated.

The task thus delegated involves the adjustment of labor employed in any phase of transport activity, either power or horse drawn. In referring these duties to the Highways Transport Committee, J. B. Densmore, Director General, United States Employment Service, has transmitted the following letter to R. C. Hargreaves, Secretary of Highways Transport Committee:

"The U. S. Employment Service recognizes the war-time need for making the most effective and efficient utilization of our highways as a means of strengthening and increasing our transportation resources, and especially is acquainted with the valuable direction given by the Highways Transport Committees to this problem.

"We are also convinced that tonnage capacity of our highways transport resources can be greatly increased by applying all

possible vehicles, horses and labor in line with national policies promulgated by you and, naturally, in transportation that vitally aids in accomplishing our war program.

"We therefore desire to effect any adjustment of labor employed in any phase of highway transport activity, relating to either power or horse-drawn vehicles, in co-operation with your national organization, relying on your state Highways Transport Committees to furnish the facts regarding essential highways transport activity with which they are intimately familiar and on which our state and local labor department officers may base their necessary orders.

"We are therefore transmitting instructions to our representatives, advising them that all matters touching or in any way affecting highways transport operations are to be dealt with on the advice of your organization."

Secretary Hargreaves states in connection with the above that the policy of the Highways Transport Committee will be to conserve and strengthen every element of highways transportation, and to so direct it as to serve those industries which vitally aid in accomplishing the war program, as indicated from time to time by the War Industries Board.

Unusual Business Conditions Require Conservation of Labor

Retail Merchants Find Cash Registers Help Them to Conform With Request of Commercial Economy Board

Merchants today are facing business conditions that are without precedent, as a result of the war. No business can be successfully carried on along the old lines. It must be adjusted to meet existing conditions.

The merchants of the United States have for the last few months been facing the same conditions and struggling to solve the same vital problems that have been met and overcome by the merchants of Canada and England in the last four years.

The Commercial Economy Board asks the stores of this country to conserve man power, materials, and money, and to stop waste wherever it may be found. The things the Government asks the stores to save and stop are the products of old, slow, wasteful methods. They are the very things that the English and Canadian Governments asked the merchants of their countries to stop four years ago.

Merchandise, overhead, and operating expenses have gone up and will increase still further. In order to maintain normal profits, it is necessary to cut down expenses as far as possible, stop losses, avoid lost motion, eliminate waste, and work faster. No store can hold on to the old, worn-out methods and operate at the speed that is required by the present day conditions.

The war has called thousands of trained help out of the stores—the new help is untrained. At the very time that the Government is spending billions of dollars and everybody has work and money so that business is unusually good, merchants have not enough trained help to handle their trade.

That is the present problem of the merchant. How can he carry on business more efficiently than ever before, meet bigger business with less help, and avoid all waste? On the way he solves this problem depends only the extent to which he will benefit by the coming time of general prosperity, but whether or not, he can with justice feel that he is doing all in his power to help win the war.

This matter is of vital importance to the merchant. He owes it to himself as well as to his country to make certain that neither his time, goods, nor money are wasted. If he is to actively co-operate with our Government in this crisis and at the same time benefit himself, he must conserve labor, eliminate waste and speed

up his business. He can only achieve these results by having a more efficient system than he has, heretofore, used.

There are two ways of learning: by experience and by observation. The least expensive way is to profit by the experience of others. The merchants of Canada and England found but one solution to this problem. That same solution has been found by progressive merchants of America. That is, labor-saving machinery to do the work of human hands in a store must be able to do automatically a good many things that require both physical and mental effort on the part of clerks.

The cash register answers the requirements. Many merchants have stated that only through the use of cash registers were they able to continue to do business at a profit. Stores that have cash register equipment have found it easier to meet the requests of the Government.

With cash registers the clerk-wrap plan can be followed by department stores. This largely does away with the need of cashiers and wrappers. The register enables clerks to make more sales. It reduces deliveries. It helps to increase business without increasing the operating force. It makes every motion count and speeds up the whole organization. It makes it possible for the stores to operate with fewer clerks. It gives quick service, which increases "Takes" and decreases deliveries. It saves clerical supplies and delivery supplies. It cuts down clerical work.

Cash registers do almost everything in their particular line except talk. They help to make first-class clerks out of poor ones. They are so simple to operate that even an inexperienced clerk can make correct records by simply pressing the keys. The registers show how much business the clerks do, how many people they serve, and how big their sales are. They not only make clerks quick, careful and reliable, but they are themselves mechanical clerks. They enable stores to operate with less help, handle a greater rush of business, and yet give good, quick service.

The clerks have fewer steps to take; they do not have so much writing to do; they can make two sales where before they made one. These are some of the reasons why merchants who are anxious to comply with the Government's request to conserve man power, materials and money and to stop waste have found their greatest assistance in cash registers.

Separate Advertisements Help Market Used Cars

Success in disposing of used cars is one of the greatest helps to a profitable showing at the end of a year's work in the automobile business. In July we printed an article from The Liberty Bell, in which President Walter Judd of the Miller-Judd Company, Liberty distributor at Detroit, told how his firm handles its used car problem.

Mr. Judd wrote that his concern used small advertisements but that in each instance the car which he wished to sell was advertised all by itself. Seven of these advertisements, clipped from various Sunday issues of the Detroit Free Press, are reproduced below:

1917 PAIGE TOURING
Car rebuilt and beautifully finished very reasonable
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open Nights and Sundays

FORD TOURING CAR
Specially built body Practically new and the price is right
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open Nights and Sundays

1916 REO ROADSTER
Can be made like a new car with a coat of paint
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open nights and Sundays

DODGE TOURING
Paint good, tires like new You may drive this car all summer with no mechanical expense
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open Nights and Sundays

1917 MAXWELL SEDAN
This is the kind of a car that in a few months it will be impossible to buy, and it is one-half price
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open nights and Sundays

1917 CHANDLER
This is the kind of a used car that will give you real service
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open nights and Sundays

1916 OAKLAND
This car has been thoroughly rebuilt and is in A-1 condition
MILLER-JUDD COMPANY
972-4 Woodward Glendale 427-8
Open nights and Sundays

Motor Tradesman in Big City Sells Many Trucks to Farmers

A. E. Bihler Proves Profit Virtue of Personal Demonstrations and Also Makes Good Use of Letters

A. E. Bihler is a business man through and through. To look at his place of business justifies such a belief. His is one of the modern automotive establish-

ments of course is apparent as satisfaction to the ultimate buyer must be lasting. His preference was given to Service trucks, which is one of many good makes that small

town dealers can represent, but the chief point in connection herewith is that **FARMERS WILL BUY TRUCKS OR TRUCK ATTACHMENTS.** 30 Service trucks. There isn't a week goes by but that he averages at least one sale and sometimes more. Mr. Bihler is a great believer in personal demonstration and follow up. Regularly he takes his Service truck and strikes out for new markets to conquer. Arriving in a small place, he immediately sizes up the prospects, makes investigations as to who are the leading farmers thereabouts, then he calls on them.

Being versed in methods of approach, it doesn't take him very long to gain the friendship and interest of the farmer, as he believes in talking in the language of the prospective buyer. He will therefore talk crops, stock, and about all the conditions which affect the prosperity of the farmer. Then he will show the farmer how motor trucks can be judiciously used to haul crops to the market and how in more ways than one he (the farmer) can cover his original purchase price out of the increased profits made available through larger crop sales, and from the increased usefulness of a motor truck.

Farmers very frequently get to the city and one way in which Mr. Bihler persuades them to visit him is by good strong, welcome and cordial letters. The letter reproduced herewith is a specimen selected from several, which Mr. Bihler uses to tell the neighboring farmers about Service trucks.

Farmers have the wherewithal, and Bihler has found out how to get his share of it and other automotive merchants can



Front of the Bihler Establishment.

ments of Omaha. Fireproof, of up-to-date construction, his building is simply an expansion of the ideas that he used successfully to "win trade."

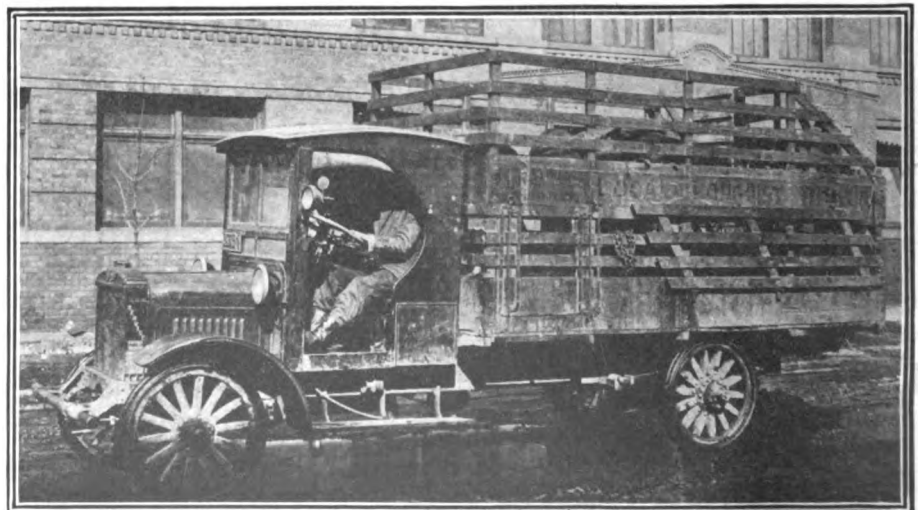
Mr. Bihler is a very modest man, and it is extremely difficult to get him to open up and tell his experiences. Step inside of his office and there you will discover him bustling with activity. You will be immensely impressed with the efficiency with which he operates his business. He not only uses all the latest time and labor saving devices, but he also uses his THINKER. Bihler says that if a man will think and work he must succeed. Notice that emphasis is put on "MUST."

There is nothing so remarkable about Bihler's experiences—he says that himself—but it shows what you can do if you want to sell trucks to the farmers. Bihler has tried both the city and small town field, and though he is located in Omaha, he caters almost exclusively to out of the city customers.

Mr. Bihler advises that a good truck agency is of paramount importance, which

town dealers can represent, but the chief point in connection herewith is that **FARMERS WILL BUY TRUCKS OR TRUCK ATTACHMENTS.**

Within recent months Bihler has sold



Service Truck with Double Deck for Live Stock.

do likewise by employing similar methods if they get busy at once and secure some good first-class truck agency.

Alcohol May Help Out Any Gasolene Shortage

Although this country produces about two-thirds of the petroleum of the world and produced more gasolene this year than ever before, investigations are being carried on by the National Automobile Chamber of Commerce with a view to exploiting the use of mixtures of alcohol and gasolene in motor vehicles. The production of industrial alcohol on a large scale would help materially to increase the supply of motor fuel.

Nearly all the automobiles in Norway and Sweden are operating on alcohol made from waste sulphite liquor from paper pulp mills. Alcohol is also used in automobiles in Spain, where the sale of gasolene for use in passenger cars has been prohibited.

Alcohol can be produced at the paper pulp mills in this country at a cost of fifteen to twenty cents a gallon at the present time. If all the paper mills suitable for the purpose were equipped with the necessary plants they would have a combined capacity of 15,000,000 gallons a year. Waste from sugar mills and waste vegetable products provide other sources for the production of alcohol. Distilleries and breweries whose business is being curtailed by passage of "dry" laws in different states and by regulations of the Food Administration against use of grain for manufacture of intoxicants, have the apparatus and skilled labor requisite for the production of industrial alcohol from these wastes. They should welcome an opportunity to continue operation, utilizing such products.

Alcohol can be blended with gasolene to produce a suitable fuel that will avoid the difficulties of starting a cold motor on alcohol alone, and without any change in the carburetor or the compression of the engine.

Well paid, high grade motor truck drivers, whose compensation is paid by the hour and not by the day, will bring success to any motor truck hauling business, in the estimation of Forrest J. Alvin, general manager of the United States Motor Truck company. Mr. Alvin finds that the high grade driver, well remunerated for his labor, and paid by the hour, allowing of no waste time to complete some important work within the strict hours of his working day, is an asset and not a liability. When a driver is paid by the day and there is not sufficient time remaining for that day to complete a job, hours will be lost where payment on the other plan will cause the driver to complete his job regardless of overtime.

Dear Sir:

Here we come with Patriotism plus profit.

You know that the rural motor express lines prove their advantages to the farmer, why don't you operate one yourself and get the best market prices for your product? It means **\$\$ DOLLARS \$\$** to you and nobody deserves them more than the farmer, who labors hard to make a living and under such conditions.

We are with you and for you and this letter will point out the way for you to gather the fruit from your hard labor. Now a truck assures you quick daily deliveries to market and saves shrinkage of your goods, also enables you to devote more time to your farm which again means **\$\$ DOLLARS \$\$** in your pocket.

Now here we come with the main issue which a farmer has to take into first consideration, to be able to buy the kind of a truck which will stand up and do his work. Our motto is, **"THE SWEETNESS OF LOW PRICES NEVER EQUALS THE BITTERNESS OF POOR QUALITY."**

You know that thousands of dollars have been spent to secure good thoroughbred stock, and this holds good in the truck line. We can offer you a **"SERVICE TRUCK"** which will come up entirely to your requirements for your work. So bear in mind and don't let the first cost of a good truck stand in your way of buying a first-class thoroughbred truck from a dealer who can stand on his reputation.

Write us at once so we will be able to take care of you as you know the Government has the first choice in material and the Factory is building 1000—5-Ton trucks for the Army at present. We also feel that by your buying a **"SERVICE TRUCK"** you will be a leader amongst your neighbors and can be proud of the purchase of same.

Whenever you are ready for a truck don't forget the **"SERVICE TRUCK,"** it means service to you, and we will be pleased to mail you specifications and price list whenever you so desire.

When you are in Omaha, make our place of business your headquarters.

Very respectfully,

ALBERT E. BIHLER, INC..

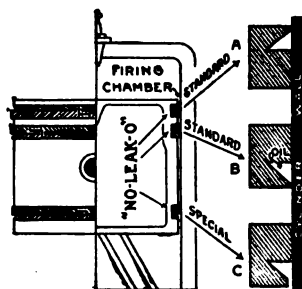
By _____, Pres.

Additional Piston Ring Functions

By J. E. NORWOOD,

President Automobile Accessories Co.,
Baltimore, Md.

As a solution of the problem of avoiding kerosene precipitation into the crank case with subsequent lubricant dilution we recommend the use of a special type of



piston ring that we have developed, so installed that the top ring provides a groove with a square edge to catch any kerosene attempting to pass. This is pushed up on the compression stroke.

After the explosion or when the piston starts down this refuse is carried out of

the groove by capillary action into the firing chamber just after the explosion, when it is the hottest, and the kerosene is then vaporized and exploded or ejected with the exhaust and not into the oil pit.

Gas cannot be controlled or held in the firing chamber except by a seal of oil. Oil cannot be held down and adequate lubrication provided, except by a seal or dam against the oil. These are the principles adopted in our no leak piston rings rather than to try and accomplish similar results solely by perfect fit, flexibility, etc.

One of the great problems of the present time is to conquer distance and it has been said that we may as well question the value of food for the human race as to discuss the value of the automobile as a prime or essential factor in the matter of the transaction or conduct of business. By business we refer to war business and activities incidental or contributing thereto.

**W. M. Webster, Commissioner,
National Association of Automobile Accessory Jobbers.**



Cash Sales Only Rule Adopted By New Tire Firm at Wheeling

A new and unique store for the sale of tires has just been opened at 19-21 Tenth street, Wheeling, W. Va. The new store is called The Mason Tire Sales Company and will market tires to the automobilist according to a new plan whereby the user of tires will secure at unprecedentedly low prices, a quality tire of national reputation. This tire is the Mason tire, manufactured by The Mason Tire & Rubber Company, Kent, Ohio.

The Mason Tire Sales Company is in charge of William F. Bruhn, a well-known Wheeling man. Mr. Bruhn has had a wide business experience and is well qualified to successfully handle the Mason Tire Sales Company. He has lived all his life in Wheeling, and was for a number of years with M. Marsh & Son, acting in the capacity of assistant manager.

In speaking of The Mason Tire Sales Company and its plan of marketing tires, Mr. Bruhn said:

"I believe we are introducing a revolutionary plan of selling our tires. There is no doubt that tire prices have been too high. We recognized that fact some time ago and we gave serious study to the problem of how to reduce these prices. We did not want to sell cheap, unguaranteed tires according to the usual cut-rate method.

"Our purpose was to sell good tires, the best quality the market afforded, at lower prices. We have solved this problem. How? By cutting our sales and overhead costs, by eliminating traveling salesmen and so-

licitors and by placing our business upon a strictly cash basis and carrying no charge accounts. This results in a big saving, and the saving we pass on to the car owner, so that he can buy the best at lower prices than have ever been offered before.

"The cash basis on which we operate is a vital point in our plan. Charge accounts with their inevitable losses, bookkeeping costs and the extension of credits run up the cost of doing business so that most dealers are obliged to charge high prices for their product.

"We avoid all these expenses and the consumer correspondingly benefits. Our business is founded upon the theory that the average automobile owner would rather come into our store and pay cash for his tires and save about twenty-five per cent.

"We also maintain a separate department to fill mail orders quickly and accurately. Tires or tubes are sent by parcel post or express on the same day we receive the order. We allow the customer to return the tires or tubes within three days after they are sent if he is not satisfied with them and we return his money. Can anything be fairer than that?

"We know no other store can sell tires equal in quality to ours at anywhere near our low prices. A glance at our price list will prove that. The tires and tubes we sell are made by The Mason Tire & Rubber Company of Kent, Ohio, which is in the famous Akron rubber district. Before deciding to sell the Mason product we carefully surveyed the field and decided

that the Mason line gave greater satisfaction than any other really good tires. We handle all their styles, the cord, the three fabric treads, plain, ribbed and lattice or non-skid, and the red and gray tubes.

"Each tire we sell is sold on a five thousand mile adjustment basis. Every tire carries our guarantee as well as that of the Mason Tire & Rubber Company, a \$3,000,000 corporation. With reasonable care, Mason tires will give greater service than their 5,000 mile guarantee. They are nationally famous as reducers of tire costs.

"We have one of the prettiest tire stores in the country. We have made it attractive because we hope the car owner will use it freely and make himself comfortable in our sales room. We have arranged for free air and water for all comers in front of the store. Any service in our power we shall be glad to extend to the automobilist. We expect the Mason Tire Sales Company will prove to everybody its mark of leadership—not fine quality alone, or low price alone—but fine quality at a low price."

The man who accomplishes things is the man who starts out early, and as the day lengthens his enthusiasm strengthens, and when evening comes he is able to show results—for he has worked every minute and with his effort he has coupled enthusiasm—the most important assistant of all.

J. H. Newmark.

Design and Not Candle Power Makes Good Electric Signs , 'Style' Element a Most Important Factor in These Trade-Calling Devices, Is Flexlume Verdict

That the automobile industry no longer doubts the effectiveness of electric signs is evidenced by the way both dealers and garage owners are installing them, but there is still room for argument as to the details which cause particular signs to produce results.

One dealer will argue in favor of fantastic designs, vivid colors and weird flashing effects while perhaps the man next door favors a sign of the most severe simplicity, and both will point to successful signs to prove their case.

The truth is that there is a certain "style" element which enters into sign designing. It is that vague "something" which out-weighs the strength of mere candlepower. This "style" shows itself in scores of ways.

Distinctiveness Stands Out.

Two signs may be totally different and still both will have it. One may be "flashy" while the other is quiet and subdued, but each has that distinctiveness which makes it stand out from the others.

For several years the Flexlume Sign Company, Buffalo, N. Y., maker of the well known Oplex signs, has been working on these problems of design. Its efforts have uncovered many interesting points concerning the things which make a sign successful, but perhaps the most surprising point that this study of the relative attractiveness of signs has disclosed is the relatively unimportance of mere candlepower.

It would, of course, be absurd to say that the amount of current used has nothing to do with the strength of the effect the sign produces. All other things being equal the sign with the strongest light behind it will attract most attention.

Letter Contour Important.

But there is just the point. The "other things" seldom are equal, and in nearly every case superior design in one sign will outweigh the advantage of candle power in the other. In producing this superiority of design much depends upon such mechanical elements as the size and particularly the contour of the letters, the background upon which they are placed.

For example investigators from this company have found that one of their Oplex signs, which has raised snow white characters on a dark background, the outline of each letter being solid, has greater reading distance than a sign of the common exposed bulb type despite the fact that the latter was larger and used more electricity.

The reason for this is obvious. An unbroken outline is easier for the eye to follow than one which is made up of several separate units of light. It is simply a matter of design versus mere candle power.

Edgar Hobbs, in Hospital, Asks Word from Friends

President Frank M. Eldredge of the Eldredge Publicity Bureau, Detroit, has just received a letter from Edgar O. Hobbs, formerly assistant to Herbert Smith, automobile editor of the Pittsburgh Press. Hobbs recently enlisted as a sargeant in the First Army Chemical Warfare Service, but was taken ill and is now recuperating, before being detailed to France, at St. Mary's Hospital, Hoboken, N. J. He will appreciate hearing from old friends while at the hospital.

**Nip the Blowout
in the Bud**

**SHALER
VULCANIZER**

**Mends
Tubes too**

Lithographed Wall Hanger Whose Bright Colors Insure Attention Even When Hung in a Dark Corner

Extension of Rural Motor Express Urged Upon Chicago Tradesmen

Extension of rural motor express lines was urged upon members of the Chicago Automobile Trade Association recently by S. A. Miles, manager of the National shows at Chicago and New York. He explained the need of more truck lines to help solve the farmers' transportation problem at a meeting of the dealers' organization and also gave some astonishing figures of the immensity of the automobile industry.

"It has conclusively been demonstrated that the safety of our country depends upon transportation; that the railroads are so congested that they cannot carry all of our food and other supplies; that the farmers consequently hesitate to produce up to their full capacity; that large quantities of available food does not reach the markets because of lack of transportation, and that about 20 per cent of the farm help has been taken away by the draft and other causes," said Mr. Miles.

"A partial remedy lies in the extension of rural motor express lines now in operation and the organization of new ones. This would enable the farmer to devote all of his time to his farm and encourage him to increase production, not only benefiting him, but furnishing the cities with more food and making the farmer a better customer for the city merchant.

"It has been demonstrated in Maryland, through investigations made by the highways transport committee of the Council of National Defense, that not only are truck lines operated successfully and profitably, but that the farmers regard them as of such importance that if they were discontinued production would largely cease.

"Scores of them have furnished evidence to the highways transport committee that their business has been increased, that their products are hauled at less expense than formerly, that the cities receive produce more quickly and in better condition than ever before, and that there has been a remarkable saving of labor. Several of them say that if the trucks were discontinued they would not continue in business, and especially in the shipment of milk.

"In addition to all this, the country merchant is greatly benefited, because the trucks carry farm produce into the cities and merchandise back to the farmers. Many a farmer is now able to profitably market produce which was formerly wasted, and when he needs supplies has them delivered at his door on

the day of order instead of from one to ten days later, as was formerly the case.

"The highways transport committee has requested the state councils to appoint committees to work with it in the promotion of these lines. More than twenty of them have already responded.

"Food administrators are deeply interested in the subject. Washington, with about 75,000 more people than in normal times, has found it necessary to make unusual efforts to procure food. Mr. Wilson, the Washington food administrator, called upon farmers and county agents both in Maryland and Virginia and found a ready response, and has been largely responsible for the establishment of a number of new lines. The Department of Agriculture, the Department of Labor, the railroad administration, the food administrator have all given unqualified indorsement to the all given indorsement to the work.

"The National Automobile Chamber of Commerce feels that it should, as a patriotic duty, do all it can to supplement the work of these volunteers. It is an organization of 115 manufacturers, with about 40,000 dealers behind it, thousands of whom are located in districts where these routes may be placed in operation and who know the routes, the country merchants, bankers, farmers and others who would be benefited. The truck committee of the N. A. C. C. is therefore appointing representatives all over the country, with instruction to co-operate with the state councils of defense, boards of trade, local express companies, agricultural colleges, county agents and others who are able to render assistance. These representatives will also seek to interest the automobile dealers in their districts.

"Assuming that a great majority of the people who will eventually operate these lines are men with no knowledge of organization, the N. A. C. C. has prepared and is distributing circular matter designed to instruct the prospective operator in every feature of the business.

"It is the desire of every one concerned to get as many routes as possible in operation this summer, so that farmers may be assured of transportation of their crops and the cities may be assured of adequate supplies."

Mr. Miles also called attention to some remarkable automobile industry statistics. He showed that the number of employes is 830,000 and that they and their dependents would populate the

city of Chicago, or Philadelphia, Boston and St. Louis combined, or any one of twelve states of seven states combined.

The wages paid annually, \$747,000,000, are approximately equal to all the gold in circulation in this country.

The capital employed, \$1,297,000,000, is greater by \$250,000,000 than that of all the national banks, greater than the combined capital stock of the Pennsylvania, New York Central, Chicago and Northwestern and Chicago, Milwaukee and St. Paul railroads; is more than twice as great as the capitalization of the Standard Oil group of thirty-five companies, and four times as great as the combined capital of all of the steel companies, with the exception of the United States Steel Corporation.

The number of passenger miles by automobile is not less than 10,000,000,000 greater than that of the railroads.

The seating capacity of automobiles is 25,000,000 persons, compared with 3,500,000 for the railroad cars. If the railroads should undertake to handle the number of people now carried by automobiles, it would require duplication of all of their passenger locomotives and cars, at a cost of over \$1,000,000,000, as well as duplication of its passenger tracks, depots and employes at an expense impossible to calculate.

"Assuming that our army of 1,000,000 men had been mobilized on the 1st day of October, our automobiles traveling at the rate of 100 miles a day, with four passengers to a car, could have carried every man in the army 600,000 miles up to the end of May," said Mr. Miles.

"It was shown that farm values during the sixteen years after the introduction of the automobiles increased at three times the rate of the previous twenty years, despite the fact that the rate of increase of population, and particularly of farm population, decreased in the later period.

"Assuming that the farmer uses his car an average of only ten miles a day, and that he is the only passenger, and that his car were taken away and a horse were substituted, the result would be a loss to our farmers of 300,000 miles in every year.

"To raise the food necessary for the horses of the United States, so much land is needed that if it were put under cultivation, with the aid of tractors, the resulting produce in one year would feed 40,000,000 people and its value would pay our national debt, including all of the liberty bonds issued to date."

Install a Curtis Air Compressor



The Curtis Sign

Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.

Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.
1515 Kienlen Ave., St. Louis, Mo.
Branch Office—530-U Hudson Terminal, New York City





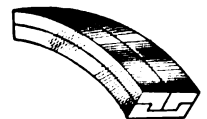
Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

The EVER TIGHT PISTON RING Co.
1609 KINGSLAND AVE. SAINT LOUIS

Ever-Tyte Bill

Says:- Ain't it funny how every shop always has one customer who's never satisfied with anything you do fer him? You're dam-ed if you do, and dam-ed if you don't, and genally this same guy has either a "flivver" or an imertation wagon that never was and never will be a real ottermobile.

These loud-mothed kickers sure do get my "nanny." A guy don't get anything by being loud and the real sports are nearly always quiet voiced fellers. I'll tell you what helps keep the "kickers" quiet—that's "EVER-TYTE" PISTON RINGS—they sure do their work without any fuss.



**RIGHT ANGLE
INTERLOCK**

War Demands for Rubber Require Fewer Tire Sizes

Industries Board and Manufacturers Reach Agreement Regarding Styles to Be Discontinued

In order to conserve rubber for war purposes, an agreement has been reached between the War Industries Board of the federal government and the tire and automobile manufacturers to do away with a number of different sizes of tires.

The list of sizes to be done away with was prepared by the war service committee of the rubber industry. This list has been approved by the National Automobile Chamber of Commerce, the Tire and Rim Association and the tire and rim division of the standards committee of the Society of Automotive Engineers.

The list of sizes and the time they are to be discontinued as given below was furnished by the General Tire & Rubber Co., Akron, maker of Jumbo tires:

29x4½ Straight side, Non-skid.
32x4½ Quick detachable, Non-skid.
33x4½ Quick detachable, Non-skid.
36x4½ Quick detachable, Non-skid, Straight side, Plain.
34x4½ Quick detachable, Non-skid, Straight side, Plain.
37x4½ Straight side, Non-skid.
33x5 Straight side, Plain.

CLASS E.

These types and sizes discontinued at once.

32x3½ Clincher and Q. D. Cl., Plain tread.
34x3½ Q. D. Cl. & S. S.
32x4 Q. D. Cl., Plain Tread.
33x4 Q. D. Cl., Plain Tread.
34x4 Q. D. Cl., Plain Tread.
35x4 Q. D. Cl. & Straight side, Plain Tread.
36x4 Q. D. Cl. & Straight side, Plain Tread.
32x4½ Q. D. Cl., Plain Tread.
34x4½ Q. D. Cl., Plain Tread.
36x4½ Q. D. Cl., Plain Tread.
35x5 Q. D. Cl., Plain Tread.
36x5 Q. D. Cl., Plain Tread.
37x5 Q. D. Cl., Plain Tread.

CLASS F.

These types and sizes to discontinue at an early date.

31x3½ Cl., Non-skid.
34x3½ Q. D. Cl. and Straight side, Non-skid.
32x4 Q. D. Cl., Non-skid.
34x4 Q. D., Cl., Non-skid.
35x4 Q. D. Cl., Non-skid.
36x5 Q. D. Cl., Non-skid.

CLASS A.

To be continued.

30x3½ Clincher, Plain and Non-skid.
32x3½ Straight side, Plain and Non-skid.
31x4 Clincher, Plain and Non-skid.
33x4 Straight side, Plain and Non-skid.
34x4½ Straight side, Plain and Non-skid.
35x5 Straight side, Plain and Non-skid.
36x5 Straight side, Plain and Non-skid.
36x6 Straight side, Plain and Non-skid.
38x7 Straight side, Plain and Non-skid.
40x8 Straight side, Plain and Non-skid.

CLASS B.

To be discontinued not later than November 1, 1920.

30x3 Clincher, Plain and Non-skid.
32x4 Straight side, Plain and Non-skid.
34x4 Straight side, Plain and Non-skid.
32x4½ Straight side, Plain and Non-skid.
38x4½ Straight side, Plain and Non-skid.
35x4½ Straight side, Plain and Non-skid.
33x5 Straight side, Plain and Non-skid.
35x5 Quick detachable, Non-skid.
37x5 Straight side, Non-skid.

CLASS C.

To be discontinued not later than November 1, 1919.

33x4½ Straight side, Plain tread.
36x4½ Straight side, Non-skid tread.
35x4½ Quick detachable, Non-skid tread.
37x5 Quick detachable, Non-skid tread.

CLASS D.

To be discontinued not later than November 1, 1918.

30x3½ Straight side, Non-skid.
32x3½ Quick detachable, Non-skid, Clincher Non-skid.
33x4 Quick detachable, Non-skid, Clincher, Non-skid.
35x4 Straight side, Non-skid.

Store-Door Delivery Plan To Ease Freight Troubles Transport Committee Studies Plan for Use in Illinois, New York, Michigan, Pennsylvania and Other States

The manner in which the great power of the United States in the way of materials, men, money and commodities is being put into the struggle against the Central Powers is being reflected in a most graphic way in the operation of the Highways Transport Committees of the various State Councils of Defense, the activities of these highways transport bodies being directed toward conservation of the potential strength of the Nation through the strengthening of its transportation facilities.

In New York, Pennsylvania, Michigan, Illinois, and others of the larger states, the store-door-delivery plan is now being given study of the most intensive character. Similarly, in these states as well as in Connecticut, Massachusetts, Maryland,

Alabama, Kentucky, West Virginia, Ohio, Missouri, California, etc., the material aid to the Government which may result from the organization of rural express lines, return loads bureaus, and co-operation with the Federal Railroad Administration is being impressed upon the public to such an extent as to produce gratifying results from these activities of the Highways Transport Committees.

The prosecution of the war during the coming year in the manner indicated by the President in his proclamation fixing a standard price for wheat, directs the attention of the country unerringly to agricultural conditions which may prevail in 1919, and demands the conservation of every possible source of strength.

The store-door-delivery plan, being put

into effect in New York City, with the approval of Director General of Railroads McAdoo, and under the personal direction of Commissioner J. S. Harlan of the Interstate Commerce Commission, means that the great terminals around New York may be the more quickly emptied, that congestion may be averted as much as possible during the coming winter.

The Merchants and Manufacturers' Association, the New York Wholesale Grocers' Association, various comprehensive trade organizations, individuals and public bodies, are co-operating with Commissioner Harlan, not only that the situation in New York City may be relieved, but that similar situations in other large centers be satisfactorily met through lessons learned in handling that one in New York.

Not far from Bend, Oregon, are found natural caves which have been a source of great wonderment to geologists and motorists from all parts of the country. For many years one of the caves supplied the town with its annual need of ice.—Automobile Blue Book.

TUNGSTEN
TRADE MARK REGISTERED
SPARK PLUG
Always on the job



Hard Service Tells

Tungstens are being used exclusively in these giant motors of Chicago Bus Company big motor bus fleet. Tungstens will stand up under unusual service conditions where ordinary plugs fall down.

Spark plugs that successfully withstand the terrific fire of these high-power motors will serve indefinitely in the motors of ordinary trucks and passenger cars.

Write for our interesting dealer plan.

Tungsten Manufacturing Co.
 Marshalltown, Iowa

Penlings from the Pen of Dike

(Not copyrighted)

A feller never put on a Tire by Cussin' but He sure eases his Mind.

Man Made Coca Cola.

He made it mighty Nice.

He made it powerful Popular.

'Cause He ADVERTISED the Price.

A Clean Garage looks as good to a Tourist as the first born baby looks to his daddy.

Fill a Storage battery with a smile on your face. Don't act like you wished the feller never lived.

Jist because a Tourist stops with you is no sign that He likes you but if you treat him as you do your Pet Customer, He sure will like you and will send others.

If you keep your customer's Tires up with the right amount of Air all the Time you won't have to use Hot Air to get his business.

Read Trade Journals and follow their Advice and you won't have to worry about your Competitor.

We Hain't got it and can't get it sounds just about the same to a customer as telling him to go to H (cut by censor).

Make a Nice Clean Rest Room for the Ladies around your Garage and the Men will come to spend their Money while the Women spend their Time.

Advertise in your Home Papers, Do it every Day,

And you will always have the money for your bills to pay.

Do your work Right so that you can look every customer in the Eye when He pays you.

C. H. WOODEN (Dike)

Lamar, Colo.

Passenger Car Has Big Part In National Life of Country David Jameson Believes Production Should Not Be Curtailed to Extent of Crippling Transportation

"In these days of so much thoughtless discussion of the curtailment of certain industries, it should be remembered that no industry which has become an essential part of the national life can be injured without injury to the organism of which it is a part," comments David Jameson, recently elected president of the American Automobile Association, who has had to do with self-propelled vehicles since their appearance on the scene nearly a score of years ago.

"Curtailment anywhere is forbidden by the laws of self-preservation, except only in so far as the exigencies of the war program require," continues Mr. Jameson, "and that program should distribute its burdens and curtailments in an equitable

manner. The nation needs its industries because they contribute to the national wealth. This will be a long war. Industries which can live ought to live. They have rights which yield only to the superior rights of the nation.

"The manufacture of passenger automobiles is one of the nation's great industries. It has suffered natural curtailment because of slackened demand upon the part of an economizing public. That it should suffer still further artificially and arbitrarily has been suggested by two thoughts, both of which are erroneous: (1) The automobile is regarded as a pleasure vehicle; and (2) as a consumer of steel needed elsewhere.

"The passenger car is no longer pri-

marily a pleasure car. I may venture to say that to ninety per cent of car owners their automobile is more a vehicle of utility than a machine for entertainment. But even the entertainment has its utilitarian side. Human nature must have some surcease from the accumulating war horror or it will break under the strain.

"The output of ingot steel in America in 1917 was 42,600,000 tons. That of Great Britain was 10,500,000 tons. That of Germany and Austria-Hungary combined was less than 25,000,000 tons. I leave out of the estimate France and Japan. Surely there will be tonnage of steel enough, more than double that of our enemies. When there is not, and we must talk of curtailment, we should have a correct conception of the important part taken by the passenger car in the transportation problem before we cripple it unduly.

"There is the matter of repairs to cars in operation. There is the matter of preservation so far as possible of plant organizations, the building up of which may have been a labor of a lifetime, all related to this great industry. When our cars are needed, the nation can have them. When the factories are needed, they should be in a state of effective availability.

Fixing Engine Castings Saves Time, Money, Labor

Hundreds of hours of labor and hundreds of dollars can be saved by the car users today who do not buy new cylinder castings unless their old ones cannot be repaired.

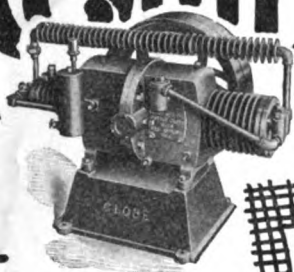
It requires an immense amount of time to machine a new casting in comparison to the time required to regrind old cylinders and make a new set of pistons. It means a big saving in iron which is so precious today.

This method also allows the foundry to make war necessities and the engine builder to machine these necessities. The engine can be made just as good as new, in fact, better because the iron seasons and will not warp or expand and contract as much under the heat as will a green casting.

It is necessary that this work be done on the highest class machines to secure success and by experienced workmen. Butler Manufacturing Company of Indianapolis is admirably equipped for this work and its officials have made this class of repairing a close study for years. They are prepared to help the automobile user save and conserve today as much as possible.

The Butler system of keeping a record of every job insures the customer obtaining parts in case of accident without serious delay or inconvenience. In justice to the increased business because of conditions brought on by the war their prices have not been advanced.

Globe Compressors



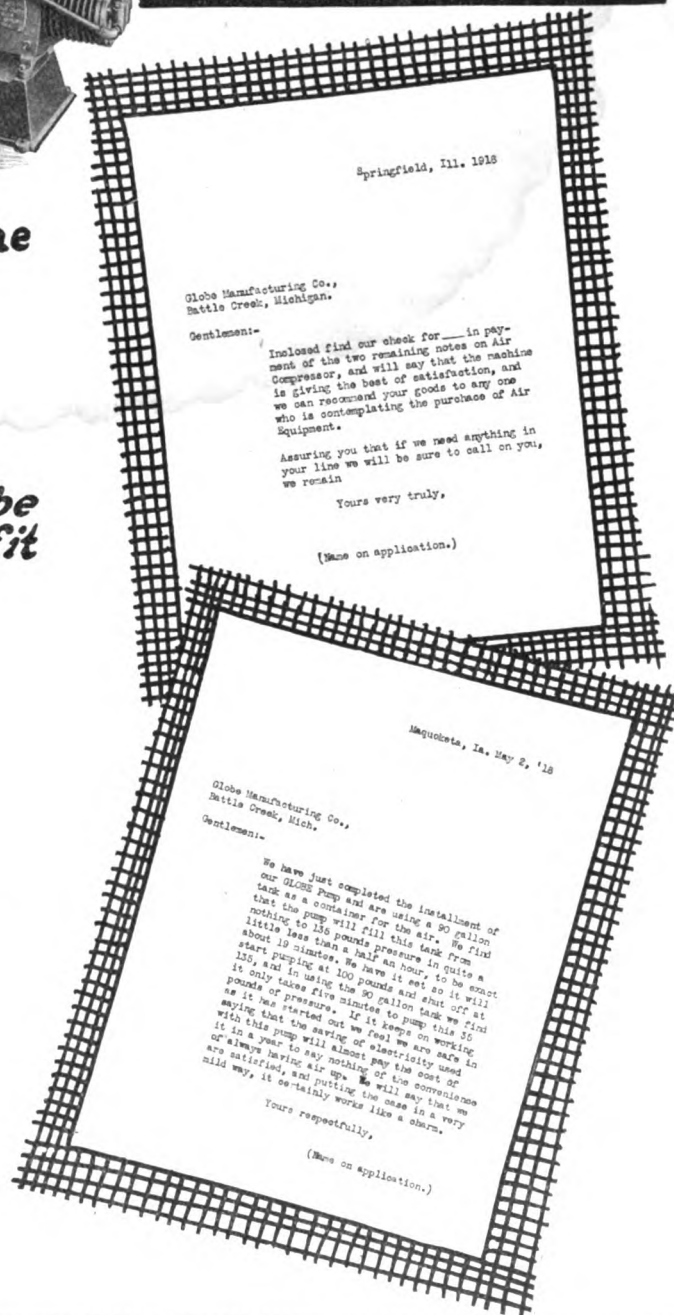
**Before you buy
an air compressor—
it will pay you to
look into the merits of the
Globe**

This equipment has become very favorably known among garagemen for giving the best service at the greatest economy of power.

Any garage which uses a Globe Air Compressor speaks highly of it

The accompanying letters are two of the many voluntary testimonials which we receive almost daily. GLOBE AIR COMPRESSORS give long service and clean oil-free air. No impurities can reach the tire. Fill in the coupon below and send it in.

**Globe Mfg. Company
BATTLE CREEK — MICH.**



MAIL INFORMATION COUPON

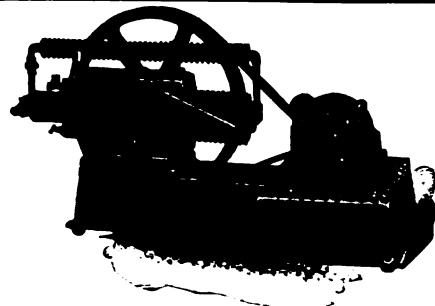
GLOBE MANUFACTURING COMPANY, Department B2, Battle Creek, Mich. A. G. & A. D.

Gentlemen: Without any obligation on my part, please send full information on the items checked (x) below:

☐ Air Compressor for Line Shaft Drive. ☐ With Motor.
☐ Air Compressor for Direct Motor Drive. ☐ With Motor.
☐ Automatic Air Plant for Free Air. ☐ With Motor.
☐ Air Compressor with Air Cooled Gasoline Engine.
☐ "DEAD EASY" Tire Pump for resale.
☐ I have or can get Electric Current. ☐ Single Phase. ☐ Two Phase. ☐ Three Phase. ☐ Direct.
☐ Voltage. ☐ Frequency. ☐ Cycles.
☐ I have power ☐ Steam. ☐ H. P. ☐ Gas Engine. ☐ H. P. ☐ Electric Motor. ☐ H. P.
☐ I have a ☐ Garage. ☐ Tire Shop. ☐ Machine Shop.

Name _____ Date _____

Address _____



Mechanical and Engineering Problems

Magneto Spark Weak

Question: I have a car equipped with a Bosch N U 4 magneto and the spark does not seem to be strong enough. The motor misses a good deal and my local mechanic says that this is the trouble. We have done everything else there is to do. This mechanic wants to send the magneto away for repairs but the car is absolutely necessary to me at the present time. Of course, I am running it as it is but I cannot but think that I am doing damage as there is a great deal of jumping and jerking.

Is there any way that I can temporarily make the spark stronger until such a time as I can lay the car up for a week or two? I must use it for two weeks yet.—J. L. B., Illinois.

Answer: You do not give the make of car and so I do not like to tell you positively what to do. If your motor is a clean one, that is, one in which carbon does not rapidly accumulate and in which oil does not pump past the pistons, you can probably get along by decreasing the clearance between the spark plug points. This will make the gap which the spark has to jump much smaller and perhaps the magneto will be able to throw across a very narrow gap. Set them so that there is barely an opening. If your engine is given to pumping oil up past the pistons to any extent do not do this as you are likely to get the plugs fouled and do more harm than good. I am assuming, of course, that the trouble is really with the magneto and nowhere else.

* * *

Grinding Gears

Question: I have an old Chalmers car. I don't know just what year but I think 1913 or 1914. It has overhead inlet valves and a four speed transmission. I bought this second hand in a city not far from here and when I bought it it ran fine and did not make any noise. Now it grinds like fury on the first three speeds and on the fourth speed grinds some but not so much.

I looked in the transmission and rear axle and found them full of a kind of spongy stuff mixed with the grease. Can you tell me whether this grind can be taken out and what they put in to stop it for a while? The engine runs just as good as it did when I got it.—J. R., Kansas.

Answer: This is the Chalmers "36" and you are about right as to the year. The grind in the transmission is probably caused by loose shaft bearings or a sprung shaft. It can be taken out by adjusting or replacing the bearings or shaft as the case may be.

The mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and consulting engineer with the Western Electric Co. He is now service manager for the Chicago Republic Truck Co. When shop information is desired, write Mr. Hinrichsen, care this office.

The grind in the differential can possibly be taken out by adjusting the differential bearings, the clearance between the large gear and the drive pinion, or by replacing the gears. I would suggest that you have this work done by a competent mechanic. Do not forget, however, that a transmission is always more or less noisy in the lower speeds and do not expect too much from a car of this age in the way of quietness.

Ground cork, ground fibre or oatmeal was probably used to make the gears quiet when it was sold to you.

* * *

Speed of Airplane and Motor Boat Engines

Question: I have a friend who owns a motor boat. I don't own anything but have become rather interested in flying. I find that there is lots to learn about flying besides doing it. I don't know much about any of it yet but my friend claims to know everything about it and has said some things that do not seem possible to me.

He says that if they would not run the airplane engines so fast that they would do better, as they run by a propeller the same as his boat, and that he does not have to run his engine fast. He says that all they are after is speed and that they could go lots slower. He says they run the propellers five thousand revolutions a minute while he runs his only about three hundred.

I don't know how much you know about such things but maybe you can find out for me as I don't believe he knows what he is talking about.—F. W., Wisconsin.

Answer: Your friend certainly does not know what he is talking about and I would advise you to study up a little on the subject yourself. In the first place a boat and air propeller operate against entirely different substances. Water is much more nearly a solid than air and a propeller gets a better grip on it.

The minimum rate of travel for an airplane is about forty miles per hour in still

air. This speed must be kept up in order to make the machine support itself. Airplane propellers are not driven at five thousand revolutions per minute. I do not know what is considered the most efficient speed at the present time, but a few years ago it was from twelve to eighteen hundred revolutions per minute and anything under twelve hundred was not considered safe flying speed.

* * *

Clutch Trouble

Question: We have a clutch that is giving us some trouble. The clutch is not giving so much trouble as the owner. This is of the multiple disc type—the clutch, not the owner—and should run in oil. Some one has told the owner that it should be run dry and only washed out with kerosene once in a while. The result is that it is always grabby and since he has been running it dry it is impossible to make a good clutch out of it. When we run it in oil now it slips.

We want to replace the plates as we feel sure that they are worn out and we know that the throw out bearing is ruined through lack of oil. If you will tell us in the magazine that this clutch ought to run in oil maybe he will believe it and let us fix him up.—J. & Co., Indiana.

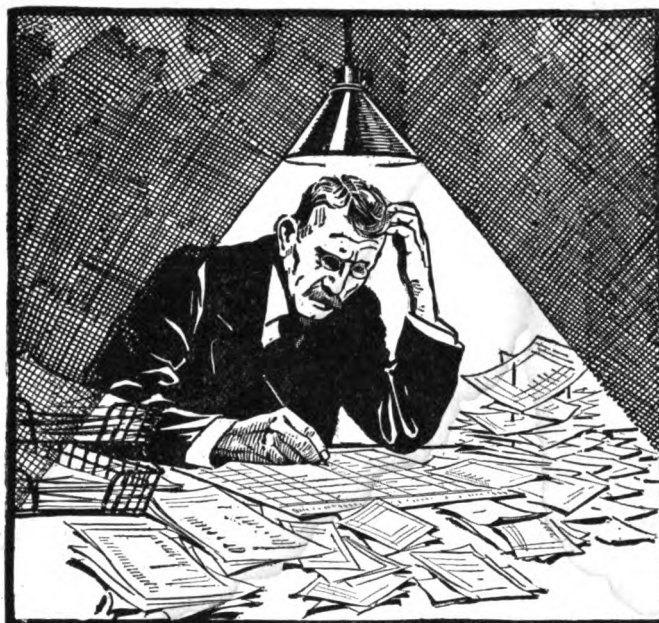
Answer: As you give neither the make of the car nor clutch, you leave me rather in the dark. There are both dry and wet clutches of this type. I would suggest that you get the instructions on this car from the makers or else give me the make and year of the car.

CONSUMER PAYS

HAULING COST

"Rapidly increasing use of the motor truck makes it necessary that more attention be given to the economic principles of highway transportation," says Robert G. Burnett, engineer of the Missouri State Highway Department, "in order that the lowest cost per ton-mile may be obtained for the ultimate consumer and taxpayer.

"Too often the fact is overlooked that in the end the community bears directly and indirectly the cost of highway transportation. Many regard the cost of operating over the road as the only cost of transportation. This is a serious error. The individual who eventually receives the goods must pay, in addition to the operating charges, his portion of the expense of constructing and maintaining the highway. It is the individual—the ultimate consumer and taxpayer—who is primarily interested in reducing the cost per ton-mile."



The old way



The new way

A man should not do the work a machine will do for him

A merchant, with all his troubles, should never do the work that a machine does better and quicker.

Our newest model National Cash Register makes the records which a merchant needs to control his business. It does fifteen necessary things in three seconds.

Without the register a man cannot do these things in half an hour.

With the register, even a new clerk can do them just by pressing the keys.

Our new electric machines are as much better than old machines as an up-to-date harvester is ahead of a sickle for cutting grain.

The latest model National Cash Register is a great help to merchants and clerks.

It pays for itself out of what it saves.

Merchants need National Cash Registers now more than ever before

— FILL OUT THE COUPON AND MAIL TODAY —

Dept. 3307, The National Cash Register Company, Dayton, Ohio.

Please give me full particulars about the up-to-date N. C. R. System for my kind of business.

Name _____

Business _____

Address _____

Accessories and Garage Equipment

BERMO WELDING OUTFITS SENT TO JAVA.

The A. J. Bermo Co., 1915 Harney street, Omaha, Neb., manufacturer of welding plants designed for all purposes, recently made a shipment of Bermo outfits to Batavia, Java, Dutch East Indies, and are now preparing a shipment for Bombay.

This firm has prepared a very interesting, complete and illustrated catalogue of Bermo welding plants, which it will be pleased to mail to any garage, repair shop or service station upon request.

SPEE-DEE GOES TO PHILADELPHIA FIRM BY CARLOAD.

No better evidence of the popularity of Spee-Dee can be furnished than by the accompanying photograph, which represents a car load of Spee-Dee recently shipped to the Supplee-Biddle Hardware Co., Philadelphia, which is one of the largest and most energetic hardware jobbers in the East.



But, as a jobber must be prepared to supply the demand of his dealer customers, this order is very significant, as it shows the confidence of the trade in the merits of Spee-Dee.

Any of the AMERICAN GARAGE & AUTO DEALER'S readers who are not already familiar with Spee-Dee cleanser should get posted at once. This compound cleans dirty, greasy, grimy hands with or without water, and washes automobiles, trucks and vehicles.

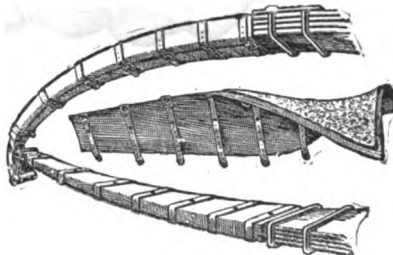
Spee-Dee is needed by every motorist, every mechanic and every housewife throughout the land, as it is said to clean everything and injure nothing. It is gritless, harmless and pleasant to use. Dealers testify that this necessity is a big seller; in fact one dealer states that he considers this the best selling auto specialty on the market. One small town dealer in Illinois sold over five cases in one week. Spee-Dee is not a soap, not a powder and not a

liquid, but is a speedy cleanser which does the work. You can purchase Spee-Dee from your jobber. The manufacturers, the States Chemical Co., 680 West Austin avenue, Chicago, say they will send dealers selling helps upon request.

WOODWORTH LUBRICATING SPRING COVER.

The Woodworth lubricating spring cover is a leather covering for automobile springs which completely encloses them. It has a lining of felt wicking which is saturated with oil before the covers are put on and will retain oil enough to lubricate the springs for a year or more. The covers are made for all cars and can be easily fitted, even by an inexperienced person.

These covers not only provide lubrication for the springs but keep out all moisture and dirt and retain the oil so that the outside does not become greasy and messy.



Proper lubrication of the springs makes the car ride easy, eliminates squeaks and makes the springs so sensitive that they absorb shocks and vibrations, relieving the tires and mechanism of a great deal of strain. The Woodworth lubricating spring cover is held on the springs by small straps which buckle underneath.

The cost of the covers range from \$2.50 to set for Ford cars to \$12 per set for Franklin cars, when made of imitation leather or in genuine leather from \$3.50 to \$20. A circular giving full information regarding the covers will be sent free to anyone writing to the manufacturers, the Woodworth Manufacturing Corporation, Niagara Falls, N. Y.

TUNGSTEN SPARK PLUGS USED BY TRUCK FLEETS.

The Tungsten Mfg. Co., Marshalltown, Iowa, has made splendid progress with big truck fleet users and reports that some of the prominent Chicago enterprises now using Tungsten spark plugs in considerable number are:

Chicago American, Chicago Tribune, Sefton Mfg. Co., Thomas Cusack Co., Mandel Bros., Jas. S. Kirk & Co., Lyon & Healy, Continental Can Co., Sulzer Bakery, Arbuckle Bros., Peoples Gas Co.

Jewel Tea Co., Chase & Sanborn, Swift & Co., Chicago Daily News, Albert Pick & Co., Frank Parmeless Co., United States Cigar Stores, Brunswick-Balke-Collender Co., Carson-Pirie-Scott.

Loose-Wiles Biscuit Co., Cudahy Packing Co., Libby, McNeil & Libby, Chicago Telephone Co., Tohey Furniture Co., Chicago Motor Bus Co., Seipp Brewing Co., Diamond T Motor Car Co., Armour Packing Co.

The Tungsten plug, which, it is said, is "always on the job," comes tidily packed in an individual metal box or container, assuring good, serviceable plugs and preventing them from becoming shopworn. The

heavy duty type is furnished in a green container. The regular type is furnished in a blue container.

The Tungsten plug has only one firing point, which concentrates all of the current into one big, fat, hot, sizzling spark and insures a maximum of motor efficiency. The Tungsten heavy duty type was brought out



to withstand unusual conditions found in high powered motors where exceptional service is required. It is claimed to be a big, powerful plug with a double glazed blue porcelain core. Its one piece center electrode is drawn from the finest nickel steel and will stand the highest temperature without corroding or warping. To those who



are interested, the Tungsten Mfg. Co. will send a list of spark plug sizes for passenger cars, trucks and tractors. Descriptive literature on request.

NEW STORM CATALOGUE READY FOR DISTRIBUTION.

The Storm Mfg. Co., Thompson, Iowa, has just published its new catalogue, No. 30, a copy of which will be sent upon request to any garage, repair shop or service station that mentions the AMERICAN GARAGE & AUTO DEALER.

This catalogue is the most complete and profusely illustrated of any thus far published by the Storm Mfg. Co., and in addition to illustrating and describing its cylinder reborer machines, it also features Storm valve port renewing tools, connecting rod gauges, piston vises, pistons, valves, etc.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....
.....
.....
Name
Address



STUDY THIS JOINT

The complete ring shows the joint open; the section within shows the joint closed.

You can readily see how this joint with its perfect sealing ability will prevent compression loss and the passing of lubricating oil into the combustion chamber.

If you want satisfied customers install GILL PISTON RINGS in the cars which you repair and overhaul.

Ask your jobber for GILL PISTON RINGS or write us for details.

GILL MANUFACTURING COMPANY

351 W. 59th Street, Chicago

All Garages should use them! **ROMORT SPECIALTIES**



Style B

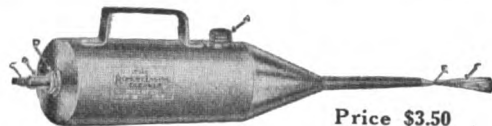
ROMORT AUTOMATIC AIR VALVES stop the waste of "free air" which costs you real money. A guaranteed device that will stand the hardest usage.



Style A

Air is released only when valve is pressed onto the tire.

Style A, list price, \$3.00
Style B, list price, \$1.00



Price \$3.50

ROMORT ENGINE CLEANER. Has no equal for removing dirt and grease from automobile engines. Does its work quickly and thoroughly. Easily operated.

Price, \$3.50

All jobbers carry ROMORT SPECIALTIES

Manufacturers
ROMORT MFG. CO.
OAKFIELD, WIS.

Sales Dep't,
The Zinke Company,
1323 S. Michigan Ave.,
Chicago



ROMORT TIRE TESTER ATTACHMENT holds your gauge to our air valves.

Price, \$1.50

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

JEFFERSON COILS ADAPTED TO MANY CARS.

The automobile ignition coil situation has, in the past, been a serious problem for jobbers, dealers and service stations, owing to the multiplicity of types on the market. Many jobbers and dealers have had to pass up the coil field almost entirely because of the large and varied stock of coils that would be necessary to take care of all requirements.

The Jefferson Electric Manufacturing Co., Chicago, has recently placed on the market a line of battery replacement coils and fittings which are sufficiently flexible to displace any type of coil on battery-equipped cars.



With a small stock of Jefferson coils, any service station, garage, or repair shop will be prepared for any emergency. Heretofore, it has been necessary to lay up a car for perhaps several days while a new coil was being obtained. Now, however, any car can be placed in service within a few minutes. It is only necessary to remove the old coil and connect the Jefferson.

To aid jobbers, dealers, service stations, and garage men, the Jefferson concern has compiled a folder containing complete and authentic data covering all standard battery ignition systems. This folder lists all makes of cars from 1912 to the present date and gives the year, model, type of ignition, and style of Jefferson coil to be used for replacement. It will be sent free to any dealer, garage, service station, or jobber. Request should be addressed to the Jefferson Electric Manufacturing Company, Congress and Green Streets, Chicago.

McKEE LENS HAS ATTRACTIVE APPEARANCE.

Most motorists confess a weakness for the little touches about their car that add to its beauty. For instance, headlamp lenses. Some owners frankly admit that they buy the best looking lens on the market because it adds "style" to their car. Thousands of lenses have been bought for this reason alone.

It is a happy coincidence that the McKee standard lens is not only attractive in appearance, but effectively accomplishes its purpose. It is the only concave-convex lens on the market. Horizontal prisms bend the light from above the 42-inch dead line and project it in a distance beam ahead of the car and on the road immediately in front of the car. A series of vertical prisms at the top of the lens reflects the light which is ordinarily wasted in the air above back onto the reflector whence it is projected through the horizontal prisms. These vertical prisms also cast some light to the sides of the road, illuminating the curb and passing cars.

Motorists who demand a lens that will serve its purpose in eliminating glare and conform to all state laws welcome the McKee lens because it not only does that, but it adds to the appearance of a car.

GILSON FIRESTONE CARBURETOR HAS ONLY TWO MOVING PARTS.

When a Ford car is fitted with a Gilson Firestone carburetor the motor is started in the usual way by pulling the choke to insure easy starting. There are no springs to get out of adjustment, as there are only two moving parts to the Gilson Firestone carburetor and they are of simple construction.

The firechamber and the fuel tube produce a perfect dry gas from low grade fuel, which enters the combustion chamber in a dry and explosive form. This causes the explosion in the combustion chamber and will produce more power, more speed and more mileage, as the heavier the fuel the more cubic inches of gas. It is manufactured by the Gilson Firestone Carburetor Co., 1806 S. Michigan Ave., Chicago.

ANDERSON AUTOREELITE USED ON WAR DEPARTMENT TRUCKS.

The Signal Corps of the U. S. War Department is using the Anderson model B-7 Autoreelite on their trucks. Equipment for 500 trucks having been shipped during one week recently. The Autoreelite is a combination dirigible windshield searchlight, with an automatic reel extension "trouble-light" making it possible to carry the lamp to any part of the car for inspection purposes and obviating the use of separate extension cords of any nature.



IN THE SERVICE OF OUR COUNTRY.

President C. W. Nash of the Nash Motors Co., Kenosha, Wis., has been made chief assistant of John D. Ryan, head of the Government aviation service.

Three members of the Parrett Tractor Company's forces are now in the service. President Dent Parrett is at Peoria co-ordinating engineering, production and inspection of the plants building Government tractors. C. R. Richardson, experimental engineer, is at Camp Jackson, South Carolina, as an instructor in the truck and tractor training school. C. E. Prudden, chief engineer, is in the Motor Transport service at New York. All three have been made captains.

A. B. Jones, second vice-president of the B. F. Goodrich Co., is now director of transportation and distribution of supplies for the American Red Cross in France.

Alice G. Carroll, secretary to General Manager L. M. Bradley of the Motor & Accessory Manufacturers Association, has resigned to take up canteen work for the Red Cross in France.

P. H. Cribbon, H. H. Hime, Oliver Jenkins and L. R. Wentworth, all of the Chicago branch of the Willard Storage Battery Co., have joined the colors.

Alexander Dow, a rim expert and inventor, is now captain in the U. S. Ordnance Department and stationed at the plant of the Western Cartridge Co., East Alton, Ill.

H. C. Hart has resigned as truck sales manager of the Nash Motors Co., to become a captain in the U. S. Ordnance Department.

Wm. S. Wolfe, assistant chief experimental engineer of the Goodyear Tire & Rubber Company, Akron, Ohio, has entered the

service of the maintenance division of the U. S. Government Motor Transport Corps with headquarters at Washington, D. C.

M. W. Hanks has resigned as standards manager of the Society of Automotive Engineers to join the Navy Department and take charge of the standardization of specifications for aircraft materials and fabricated parts.

C. I. Alexander is serving as an expert in business administration at the Detroit office of the Ordnance Department. He was formerly with the Chalmers Motor Co. and Dodge Brothers.

AMONG THE MANUFACTURERS AND EXECUTIVES.

C. C. Winningham of Detroit has been appointed chief of the Gasolene Section in the Oil Division of the Fuel Administration at Washington. There was some talk that Mr. Winningham might accept an office in the Government motor transport service but he decided to take his present post. He was advertising manager of the Hudson Motor Car Co., for several years.

W. C. Anderson, formerly in charge of the St. Louis branch of the Ford Motor Co., has been appointed manager of the Chicago branch. The assembling plant at St. Louis has been turned over to the Army and W. N. Johnson has been placed in charge of the Ford company's St. Louis office as assistant manager.

L. F. Collins is now truck sales manager of the Nash Motors Company, his appointment having just been announced by General Sales Manager V. B. Voorhis.

Emlen S. Hare has been elected a vice-president of the Packard Motor Car Co. He will continue as president of the Packard New York branch but will be stationed at the plant offices in Detroit.

W. G. Bell has been appointed Canadian sales manager for the Cleveland Tractor Co. For the past four years Mr. Bell has been assistant sales manager in Canada for the Studebaker Corporation.

T. P. C. Forbes, a veteran of the automobile industry best known to many other old timers as "Miracle Tommy" for an achievement on a Glidden Tour, has been made assistant sales manager of the Fulton Motor Truck Co.

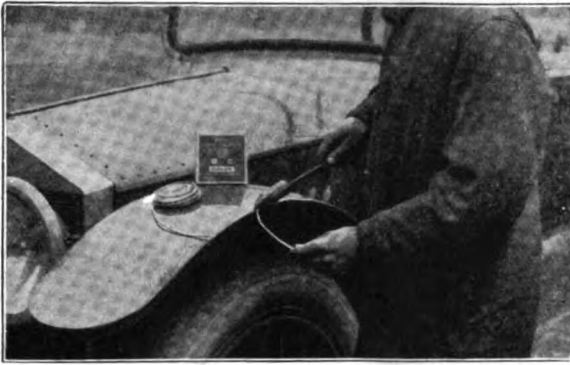
C. B. Meyers is now manager of the sales promotion department of the United States Motor Truck Co.

Gordon G. Atwell has been appointed Southern factory distributor for the Van Spring Oil Co., Chicago. Mr. Atwell's headquarters are at Nacogdoches, Texas.

John Squires has resigned as general manager and chief engineer of the Signal Motor Truck Co.

Frank H. Carroll is now district manager of the B. F. Goodrich Co., with headquarters at San Francisco. M. D. Bixby has succeeded Mr. Carroll as manager of the Los Angeles branch.

Ralph J. Handy has been appointed sales manager for the Lorton Truck Co., Youngstown, O. He was formerly Tonford distributor at Detroit.



KESTER Acid Core Wire Solder makes a good substitute for your drafted men between 18 and 45

Some garages figure that this solder saves one-half to three-quarters of an hour per day, per man.

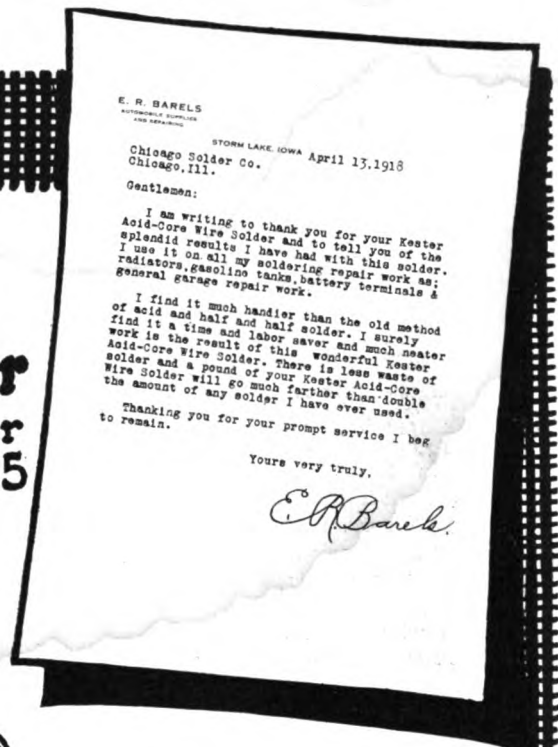
Kester Acid-Core Wire Solder is the acknowledged time and labor saver in the garage. No additional flux or acid required; neither any brush or acid pot. Ready to use. The best for general automobile and garage work. Try it on your next repair job.

Sold in 1 lb. coils in cartons and on 1, 5 and 10 lb. spools.

Order from Your Jobber.



CHICAGO SOLDER CO.
CHICAGO U. S. A.



You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

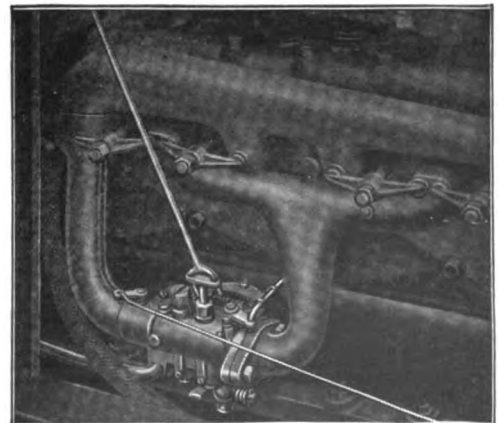
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Win-the-War Spirit in Business Letters

"See that a win-the-war spirit gets into your business letters" is the slogan of a movement launched by the Department of Commerce to remind business men that the every-day business letter is a most effective instrument for creating confidence in the Government's war policies and for inspiring others with the determination to see the war through at any cost.

"The idea was first brought forward in connection with American business letters to foreign countries," said Secretary Redfield. "The volume of our foreign business mail is very large. It reaches firms in all but the enemy countries. For the most part it is read by those who are for us, but you may be sure that it reaches many who doubt our success and many who are at heart against us. I am sure that every foreign business man who opens an American letter is quick to detect even the slightest indication of the writer's feelings on the conduct of the war and its outcome.

"It is of the utmost importance therefore that the American business letter breathe confidence in every line. If the manufacturer or exporter feels that he has a just grievance against restrictions imposed on his trade, by all means let him go right to headquarters and regis-

ter as emphatic complaint as he feels is justified. But he certainly should not carry the matter into his business letters. It is sure to create an entirely erroneous impression in some minds.

"Let the American business man make known to the whole world that he is for this war and that he is going to see it through, regardless of inconvenience, loss of trade, loss of money, or anything else. Every manufacturer ought to be fearless in expressing his sentiments even though he may be writing to a concern whose sympathies he may suspect are not wholly with us. Don't give a foreign concern the idea that you are apologizing for your Government's restrictions or that you are chafing under them. Spread the impression, the absolutely correct impression, that over here we are backing this war unqualifiedly."

The advent of women in war work is not entirely novel, we learn from Points of Interest in the Automobile Blue Book. After the revolutionary period there is record of a party under leadership of Prudence Wright, who captured a British spy on the spot now marked by a granite stone at the bridge over Nashua River—now Groton Street—Pepperell, Massachusetts. The annals of New England history prove conclusively that Molly Pitcher was not the only woman who fought for the independence of the United States.

Red Cross Asks for Men to Join Overseas Driver

The Automotive and Mechanical Section of The American Red Cross, a recently created department under the direction of Major H. P. Harding, has issued a call for 1,500 men with some mechanical knowledge to drive trucks and ambulances overseas.

A course of 3 to 5 weeks will be given at the training camp located in Chicago comprising military discipline and mechanical schooling. Immediate entrainment for overseas duty will follow completion of training.

Major Harding states that while mechanical training is helpful it is not absolutely necessary. The ambitious man who will knuckle down to hard work for a few weeks can acquire sufficient knowledge to efficiently perform his duties if he can now drive a car.

Special appeal is directed to garage and repair men, dealers and all men in the automobile industry. Monthly allowance and maintenance will be paid after date of sailing; half pay and maintenance while in training.

It is very likely that this quota will be quickly filled, and it is suggested that those desiring to get into this branch of the service get their applications in as early as possible. Headquarters are at Room 528, Peoples Gas building, Chicago, Ill.

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air**.

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

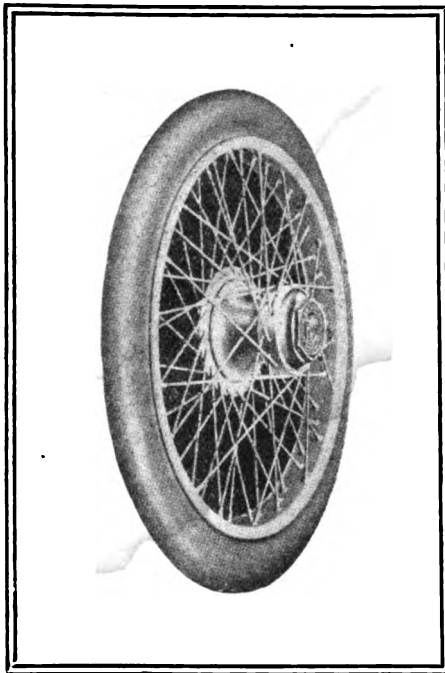
National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.



National Rubber Filler Co.

MIDLOTHIAN TEXAS.





PASCO Wheels

are worthy of your car.

Not alone will its appearance be improved. The increased riding-ease, the gasoline and tire saving, and the greater wheel safety will more than compensate you for the initial cost.

An improved tangent method of spoke-lacing, an indestructible hub cap, and an ingenious safety locking device have brought dealers and public alike to realize that PASCO wire wheels are a bit out of the ordinary.

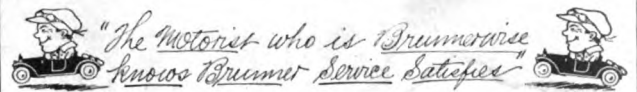
It will pay you to investigate the facts yourself.

DEALERS: Write for our attractive sales plan.

**NATIONAL WIRE
WHEEL WORKS, Inc.**

Dept. G, Geneva, N. Y.

Service Stations in the principal centers



**The Confidence of the Motoring Public
Is the Garageman's Greatest Asset**

BRUNNER

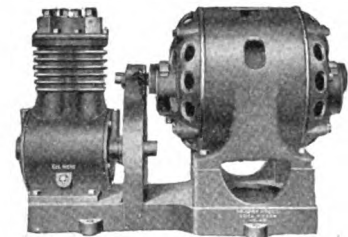
AUTOMATIC GARAGE AIR COMPRESSORS

inspire confidence because they are absolutely reliable and motorists know they are going to get service when they pull up in front of the garage displaying the Brunner sign—



The bright red centre of the well-known Brunner sign is eagerly sought out along the highways from ocean to ocean by thousands of Brunnerwise motorists who know that a high-class, efficient compressed air supply is always available where the Brunner sign is displayed.

The Brunner sign was the first air sign—an original Brunner idea.



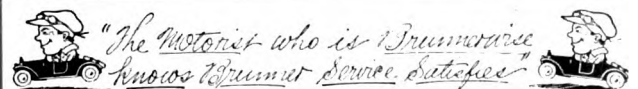
The Brunner is the pioneer of all garage air compressors. A Brunner Automatic would increase the efficiency of your air service and conserve labor for you, Mr. Garageman.

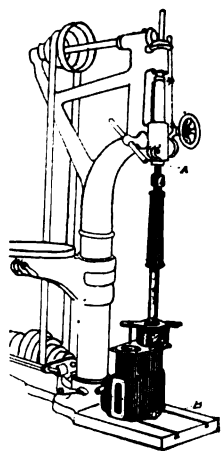
Write for Catalogue No. 15 and name of the Brunner jobber covering your town.

BRUNNER MANUFACTURING CO.

Main Office and Plant
UTICA, N. Y.

Cincinnati Branch
CINCINNATI, OHIO





STORM

CYLINDER RE-BORING MACHINES

Are Making Big Profits for Thousands of Repair Shops.

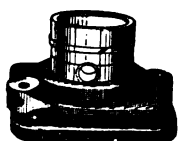
They are Simple, Speedy, Accurate and reliable for hand or power. Adjustable for different sizes and are made in varied capacities to suit your requirements.

Also special Machines for Ford and Dodge.

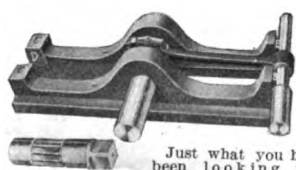
No shop complete without one. In daily use in United States and foreign countries.

The Storm Connecting Rod Bearing Reamer, Jig and Straightening Gauge

The Storm Piston Vise



Holds the Pistons firmly while repairing or replacing bushings, pins, rings and rods. Saves time and prevents damage.



Just what you have been looking for! Makes accurate fitting bearings and insures perfect alignment. With it your cheapest man can do expert bearing work.

We also manufacture the Storm Valve Tool, Special Pistons, Etc.

For Sale by Leading Jobbers Write for Catalog

STORM MFG CO.

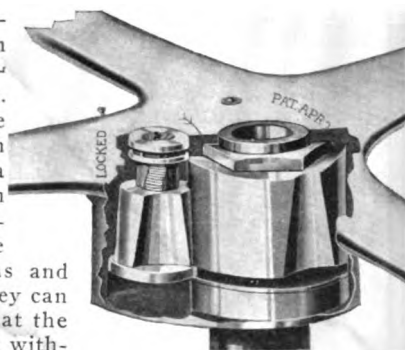
1714 4th Street

THOMPSON, IOWA

"RELCO"

The Ultimate Automobile Lock

The lock that the motoring public has been waiting for. Gives absolute protection. Adaptable to any make of car other than Fords. Mechanically a wonder. Fitted with the King-Multiple-Tumbler Lock, capable of countless variations and for which no master key can be made. A half turn at the key locks or unlocks it without moving the lock from its position on the steering shaft. Once locked, car cannot be driven or towed. Powerfully made—no thief with a hammer can break the "RELCO."



Approved by the Underwriters' Laboratories, and affords 15% discount on insurance.

DEALERS: You will find a ready market for the "RELCO" Lock. Your profit is liberal. We also manufacture the famous MUELLER LOCK for FORDS.

Write today for particulars.

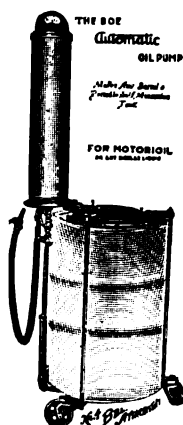
THE RELIANCE COMPANY

411-417 So. Sangamon St.,

CHICAGO, ILL.

Distributors in every state

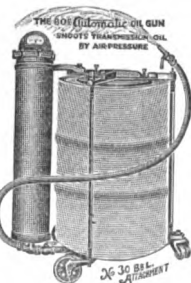
Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY

2416 University Ave. S. E.

MINNEAPOLIS

MINNESOTA

AMPECO PRODUCTS

Sell readily because their superiority is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

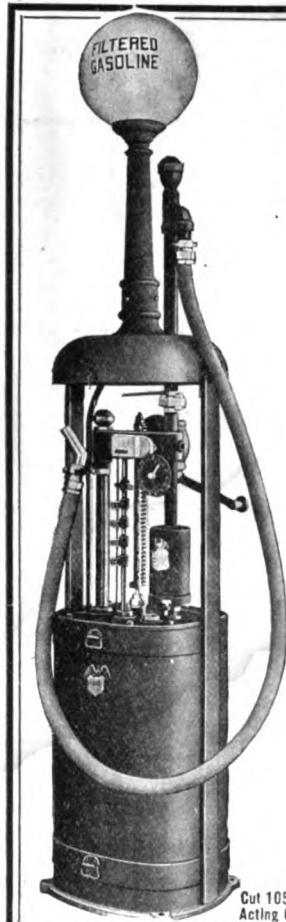
FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

American Machine Products Co.

Marshalltown, Iowa



Cut 105—5 Gallon Double
Acting Curb Pump.

RESULTS—The Reward of Thought and Preparation

Results are the object of all our efforts, and are only secured after much thought and preparation. Applying this to your garage business, patronage and profits are secured only after knowing what the motoring public demands, and preparing to meet their demands. You will agree that the motorist demands clean gasoline delivered in a quick, efficient and convenient manner. Meet this demand by installing

AMERICAN GASOLINE and OIL STORAGE EQUIPMENT

and handle your gasoline and oil in the approved and up-to-date manner.

Write for bulletin giving complete information, prices, etc.

Salesmen wanted—good territory open

AMERICAN OIL PUMP & TANK CO.
Cincinnati, Ohio

Cut 101—1 Gallon Double
Acting Curb Pump.

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

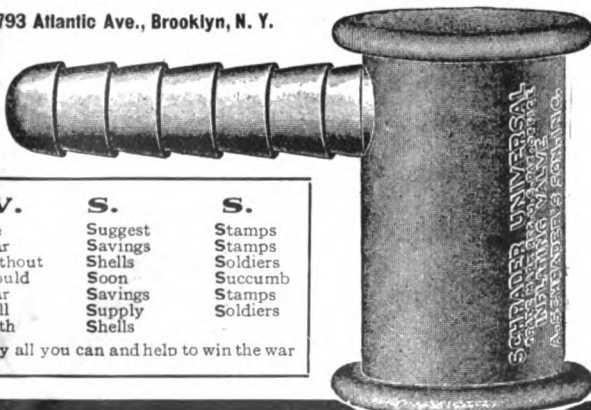
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{1}{2}$ inch. Price, \$1.50.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

You never can tell when the
**BUFFUM PATENT BUICK
VALVE REMOVER** will
come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the **only** device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.

Every Garage and Repair Shop

should have a **BUFFUM BUICK VALVE REMOVER** as part of its regular equipment.

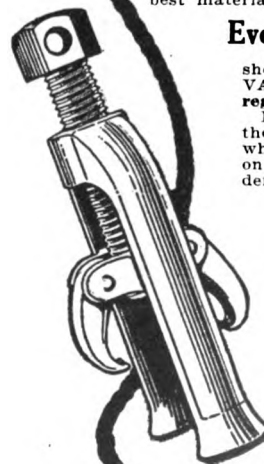
Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00 Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.



WILLARD SUPER HEATER

A great
saving
for the car
owner.

Big Profits
for You

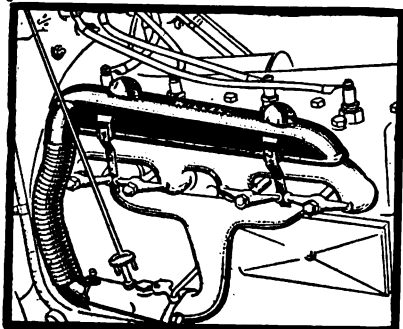
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD

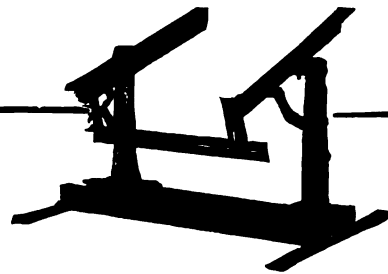


Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

Do You Still Use Acid When Soldering?

If you do, you are running unnecessary risks, and not getting the best results

Some factories use Sal-Ammoniac and water as a dip to keep the soldering iron bright and well tinned, but as that is made from Sulphuric Acid and Ammonia, either one of which will corrode badly, the habit is very bad practice and should be discontinued at once.

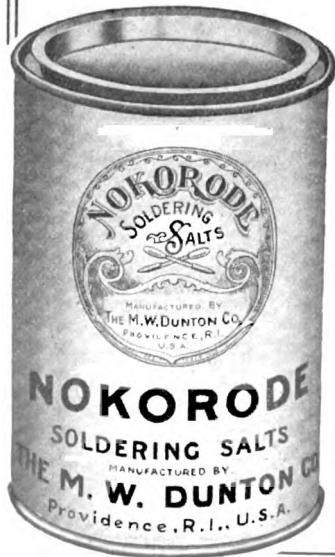
Dip the hot soldering iron into the solution of NOKORODE SALTS and water

and a better tinning will be obtained without danger of damaging the work from corrosion, should any of it be spattered on the metals.

Acids spattered on the arms or hands cause sores and burns, whereas the hands can be used to stir an eight to one solution of water and NOKORODE SALTS without burning them.

NOKORODE SALTS and NOKORODE SOLDERING PASTE are used in the most progressive automobile repair shops. If your jobber happens to be out of Nokorode products, write us for literature and prices.

The M. W. Dunton Co.
PROVIDENCE, R. I.
U. S. A.



The *Breco* Converter FOR

charging batteries or for any other purpose where it is necessary to change A. C. to D. C. is Far Superior.

**HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE**

The new, modern method tested by years of everyday service. Endorsed by highest authorities.

Price, \$24.00 Up—Sizes, 1 Battery Up

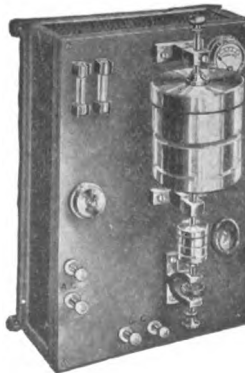
Battery charging becomes a very simple, inexpensive and mighty profitable matter with the BRECOCHARGER.

Write for Catalog No. 22

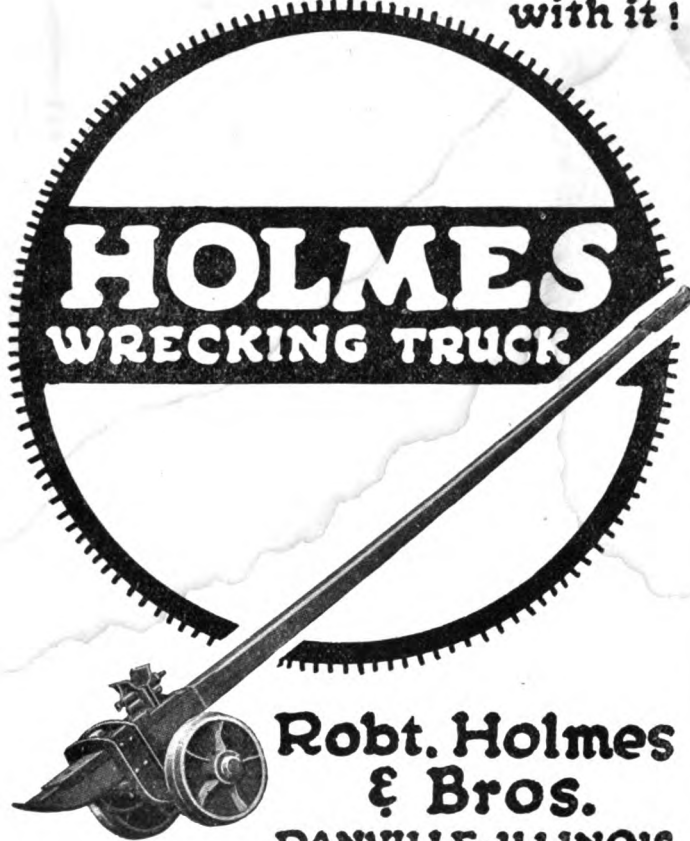
**THE
BRECO ELECTRIC CO.**

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees



**Disabled Cars can
be towed in quickly
with it!**



**HOLMES
WRECKING TRUCK**

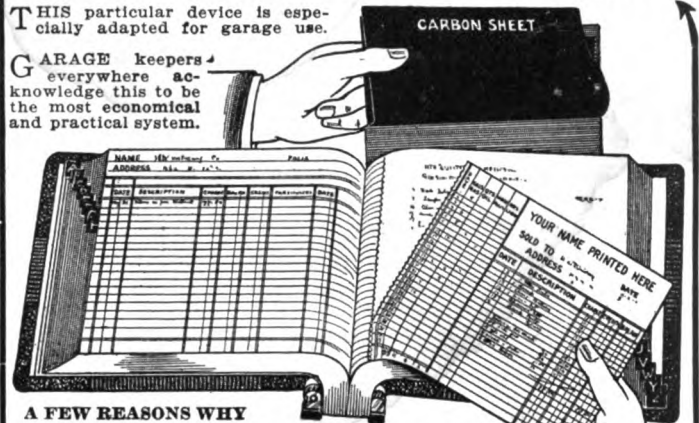
**Robt. Holmes
& Bros.
DANVILLE-ILLINOIS**

SAVE TIME AND MONEY

**Our SPECIAL GARAGE Bookkeeping Plan
Gives You the HIGHEST Possible EFFICIENCY**

THIS particular device is especially adapted for garage use.

Garage keepers everywhere acknowledge this to be the most economical and practical system.



A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Horton's Garage and Accounting Record is another new labor saving device we make. Ask about it.
SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS
THOMAS J. HORTON & CO., Inc., 212x Church St. NEW YORK
Loose Leaf Specialties

GET ANOTHER 5000 MILES OUT OF YOUR OLD TIRES

Save old tires! They mean dollars and cents to you.

It makes no difference whether they are sand blistered, punctured, rim cut or blown out, McDaniel will put them back on the job.

Simply send your old tires prepaid to the address below, with your name and address attached. When the tires are received at the McDaniel plant they are carefully examined by experts and all necessary repairs are made. The better cover is telescoped over the other one, then the bead is cut from the outer tire and both are firmly locked together by the

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40

SPECIAL McDANIEL DOUBLE TREAD PROCESS. Your old tires are now made into one good tire ready to give you thousands of miles extra service.

TIRE DEALERS and GARAGEMEN—We have a proposition that means a great deal to you. Let's get together. Write today.

Leo McDaniel Rubber Co.,
804 Commercial Ave., Cairo, Ill.

Make Your Own Electric Light and Make Big Profits at the Same Time Charging Auto Storage Batteries with the

H-B LIGHTING AND BATTERY CHARGING OUTFITS

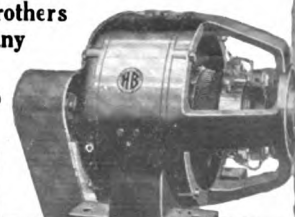
Hundreds of garages where electric current is not available are using this money-making equipment. Operates from line shaft or engine, giving ample capacity for brilliant lights at low cost and recharging from one to six 6-volt auto storage batteries at one time. Income 75c to \$1.50 per battery, with average cost of only 12c to 15c.

\$18.50 Puts This Money-Making Outfit In Your Garage

Balance in 10 monthly payments of \$12.00 each. Write for full information, or send cash payment with trial order. Under absolute money-back guarantee, you run no risk.

We also furnish electrically operated equipment. Write for information.

Hobart Brothers Company
Box G-9,
Troy, Ohio



GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company
1002 Washington Boulevard
Chicago, Illinois



Smooth as the flight of the birds



going South for the Winter is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 100,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There will be more than that number sold in 1918.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

**Monogram Users are
Quality Choosers.**

**NEW YORK LUBRICATING
OIL CO.**

NEW YORK CITY
and CHICAGO
Branches in Principal Cities



Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

Don't Send Your Customers to Another Garage!



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

Weston

Model 280
GARAGE TESTING INSTRUMENT

is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*.

Weston Electrical Instrument Co., 30 Weston Ave., Newark, N. J.

23 Branch Offices in Larger Cities



GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.



Sells for \$4.00
Worth the price of car

The DEFENDER is the "Standard" Ford Ignition Lock

Always demand the Defender, and take no imitations. The Defender safely locks the coil-box, and is the only lock that grounds the electrical system; this makes them thief-proof. Insurance Companies require the Defender and allow 15% off on Insurance.

DEFENDER AUTO LOCK CO.
DETROIT, MICHIGAN

The *Geyser* VISIBLE GASOLINE DISPENSER is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage.

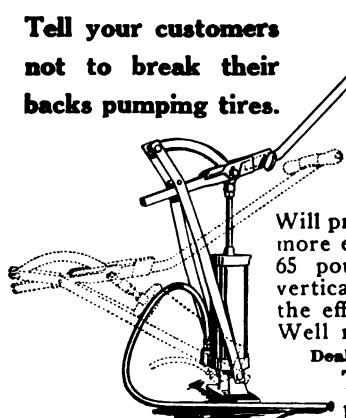
Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.

Tell your customers not to break their backs pumping tires.

\$500 Jensen Tire Pump



Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

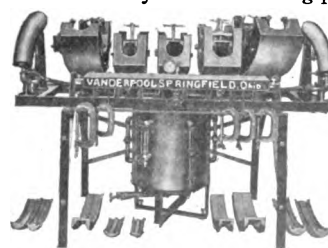
Dealers' discounts on request

The W. H. Howell Company

10 State St., Geneva, Illinois

Do as we say and Make Big Money Open a Tire Repairing Shop

All the work you can do. Big profit on every job. We give instructions, sell you complete equipment and tell you how to start.



VANDERPOOL VULCANIZER

Only vulcanizer recommended by leading tire factories because the only one that repairs tires EXACTLY AS THEY WERE MADE.

In answering, address DEPT. O

WM. VANDERPOOL CO. Springfield, Ohio



PISTON RINGS

Put Energy In
Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.
KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.

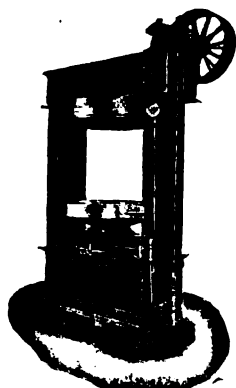
Elgin Six

"Car of the Hour"

Has gained predominance in its price class by unmatched performance. All that a motor car should be, at a price that is surprisingly low.

117-inch Wheelbase
Valve-in-head Motor

Elgin Motor Car Corp., Argo, Illinois



Tire Applying Press

Hydraulic Arbor Presses

work easier
than any
others.

We make
many sizes
for many
purposes.



WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.

WELDING PLANTS for the Garage

BERMO WELDING PLANTS

are made in many styles. There is one that will just fill your requirements.

Welding
is highly
profitable

Write for particulars

A.J. BERMO CO.
OMAHA • NEBRASKA

\$25 to \$300

3 to 6 months
to pay in small
installments

"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar
Stock and are Heat Treated. For

STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price
\$1.25



Graham Roller Bearing Co., Coudersport, Pa.

VULCAN

AUTOMOBILE SPRINGS

Immediate shipment VULCAN seven leaf, heavy, oil tempered, fronts for the Ford. 588 other types, 90,000 springs in stock. Liberal discounts.

JENKINS VULCAN SPRING CO.

Factory and General Offices, Richmond, Indiana.

Branches with full stocks

St. Louis, Missouri	-	1402 Chestnut Street
Minneapolis, Minn.	-	1024 Hennepin Avenue
Dallas, Texas	-	209 South Houston Street
Reading, Pa.	-	538 Franklin Street
Sumter, S. C.	-	29 Caldwell Street

INLAND 1 PIECE PISTON RING

Over 2,000,000 in use—Supplied by
jobbers everywhere.

INLAND MACHINE WORKS

817 Mound Street

St. Louis, Mo.



SIMPLICITY

Demountable Wheels Enable That Quick Change

DEALERS—Every Ford owner is interested. Write today
for literature and trade proposition.

THE SIMPLICITY DEMOUNTABLE WHEEL CO., Grand Rapids, Mich.

GUARANTEED SPRINGS CARRIED IN STOCK FOR ALL MAKES OF CARS

For QUICK and SATISFACTORY SERVICE
order your springs from

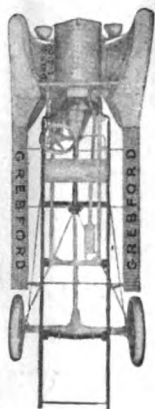
Write for our catalog TO-DAY—DON'T DELAY
Liberal Discounts to Dealers

AUTO SPRING
REPAIR CO.

1331 W. Jackson Blvd.
CHICAGO, ILL.

"Style C"

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



The GREBFORD Unit will lengthen Ford cars in an hour's time!

Wheelbases—112, 115, 118, 124, 130 and 136 Inches
Capacity—1,000 to 1,500 Lbs.

With the GREBFORD it is not necessary to cut or disturb the Ford frame.
Shipped all assembled and ready to be instantly installed.

Prices surprisingly reasonable.

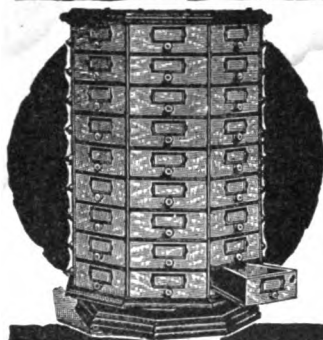
Write for literature and trade offer, or ask your jobber.

THE GREB COMPANY

194 State Street

Boston, Mass.

REVOLVING CASES!



Especially designed for
garages and service stations

are the only satisfactory way of keeping your repair parts, such as bolts, screws, cotter pins, ball bearings, etc. You can find them instantly and they are protected from dust, rust, etc.

Made in many sizes of best grade materials.

Write for Catalog

**AMERICAN BOLT &
SCREW CASE CO.**
DAYTON, OHIO.

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*Locate YOUR electric troubles
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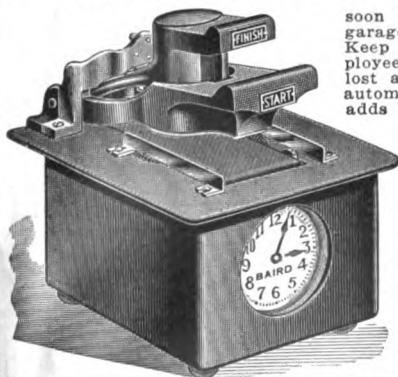
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Keep a check on your em-
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Sizes to fit any motor.

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Largest Car Wreckers in the World
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Eveready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Catelain Hose Coupling.

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Seat Covers. One-Man Top.

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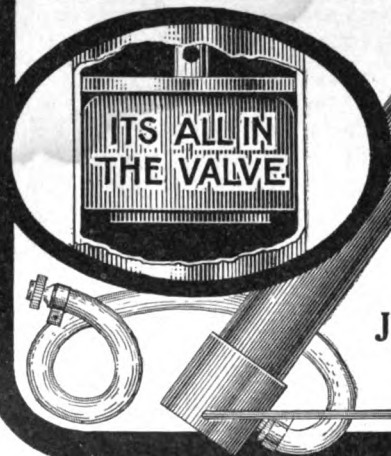
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Of all sad words
Of tongue or pen
The saddest are these.
"It might have been"
WITH A
ROSE TIRE PUMP



DOUBLE, TRIPLE and
COMPOUND Tire Pumps
Are Out-of-date.

Nobody will use one after trying
THE ROSE—
"It's the Patent Valve."

DEALERS! Most Jobbers Handle
Rose Pumps and Grease Guns. If you
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**THE OLD
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**THE ROSE WAY
EASY FOR A CHILD.**

**KENNEDY
Auto Storage Covers**

furnish efficient protection for cars in dead storage.
They are made of strong, heavy paper, properly
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THE KENNEDY CAR LINER & BAG CO., Shelbyville, Ind.

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Manufacturers of

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Inner armor for automobile tires.
Prevents punctures and blowouts.
Double mileage of any tire, old
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and over in several tires. Will not heat or pinch.
Cheaper and better than double treads, etc. De-
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Sales Guaranteed. Liberal Profits.

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FAN BELTS**

Best service for the motorist.
Biggest sales for the dealer.
Ask your jobber.

The Charles H. Buettner Co.
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WAGNER AUTO ENGINE CLEANER KEROSENE

One qt. kerosene and 6 lbs. air pressure cleans all
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Necessity for repair shops.

Wagner Specialty Co., 1902 Broadway, New York City

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AUTO SUPPLIES COUPON BOOKS

SENSITIVE. F. O. B. DESTINATION. SAMPLES FREE.

**WE HAVE SOLD MILLIONS OF
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WAR SAVINGS STAMPS
ISSUED BY THE
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GOVERNMENT

NO CARBON-MORE POWER-LESS FUEL

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OIL SEALING PISTON RINGS NO-LEAK-O

Every set guaranteed

7 years success. Popular sizes 50 cents. Sold by over 100
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Gill Mfg. Co., 357 W. 59th St., Chicago.
Inland Machine Works, 817 Mount St., St. Louis.
Keys Piston Ring Co., 3008 Olive St., St. Louis.
Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.
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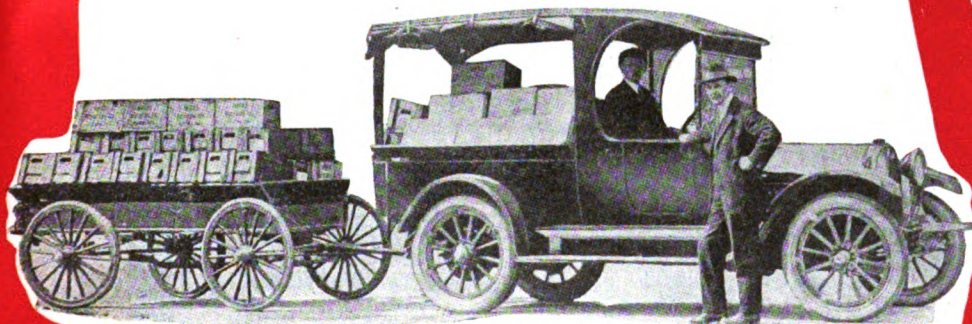
The Graham Roller Bearing Co., Goudersport.

Passenger car dealers needn't be discouraged because *YOU* can get all the **MIAMI TRAILERS** you can sell.

IF the building of passenger cars is discontinued, you must look elsewhere for something with which to fill the gap in your business. If you are not already selling trailers, nothing could be more logical than to add them to your line at once.

The trailer is a war-time necessity and their sale has increased tremendously during the past year and a half. It cuts hauling costs so radically that nearly every merchant and manufacturer in your locality is a prospect.

MIAMI TRAILERS have made good wherever used. They are substantially made to stand automobile speed over all kinds of roads. The specifications include artillery wheels, Timken axles and bearings, and a special shock absorbing draw-bar that relieves the strain on the car or truck.



Fostoria Bottling Co., more than double the capacity of truck

The MIAMI is a trailer you can recommend and sell with confidence. They are made in 12 styles—there is a MIAMI TRAILER for every purpose.

You will be interested in our very attractive dealer proposition

The price of the MIAMI is so reasonable that you can show any prospect how it will soon pay for itself. And we can show you where there are plenty of live prospects. Don't delay, but write at once for particulars.

Manufactured by the
MIAMI TRAILER CO
TROY - OHIO

PLEASURE AUTO BUILDING TO STOP

War Industries Board Advises Manufacturers to Shift to Munitions This Year.

BY ASSOCIATED PRESS.

WASHINGTON, Aug. 9.—Manufacturers of passenger automobiles were advised by the war industries board to-day to convert their plants to 100 per cent war work not later than Jan. 1. National Automobile Chamber of Commerce received the information in response to manufacturers who volunteered to curtail 50 per cent.

The letter in part follows: "The war industries board cannot at this time make any promise whatsoever regarding the supply to your industry of steel, rubber or other materials for any period in advance.

"We strongly believe that it is to the best interests of all manufacturers of passenger automobiles to undertake to get on 100 per cent war work as rapidly as possible, not later than Jan. 1, 1919.

Whether way can you be sure of the success of your industry in the future of your country?"

U. S. TO CUT USE OF 'JOY' AUTOS, DEALERS TOLD

Washington, D. C., Aug. 16.—[Special.]—Automobile dealers were advised by the war industries board to-day to place themselves on a war basis in preparation for whatever curtailment of pleasure car manufacture may later be ordered.

While no order has been issued cancelling motor car production, the board said that as a result of its suggestion to automobile manufacturers they undertake to get into war work, even up to 100 per cent if possible, by Jan. 1 next, war orders aggregating nearly \$900,000,000 already have been accepted.

The board also announced that owing to shortage of steel and rubber the war service committee of automobile dealers had agreed to "recommend ways and means to stop the unnecessary use of passenger cars and increase their utilitarian uses."

**\$3**

per set of 3

Outwears several sets
of ordinary linings

The red box
identifies the genuine

CORK INSERT

Transmission Lining for Fords

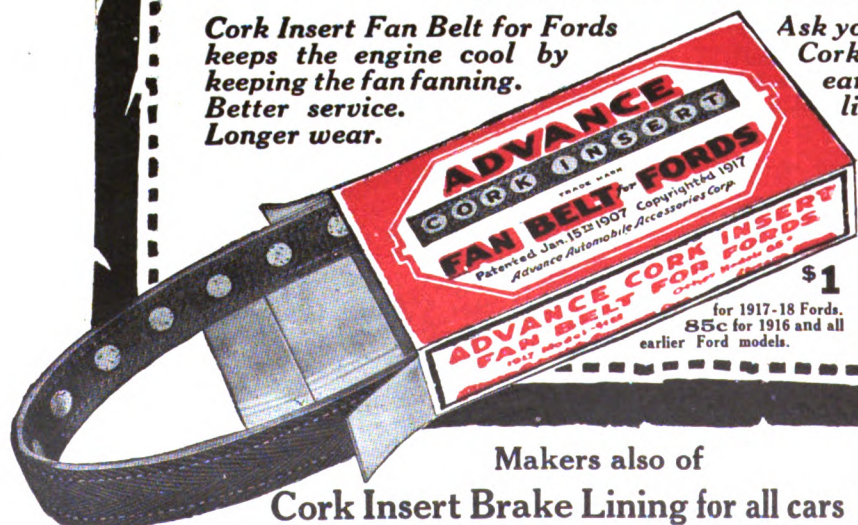
The success of Cork Insert has resulted in *inferior* imitations. Some imitate the name, some the idea, some the box. **BE SURE THAT YOU HANDLE THE GENUINE.** It's the lining your customers want. The lining that will **MAKE GOOD** for them. The lining that will hold their good will for you. We warn you especially against lining in which metal is used. It not only causes chattering but particles of metal worn off by the friction are apt to cause short circuits.

Cork Insert has made hundreds of thousands of dollars *extra* profits for the dealer by replacing sales of ordinary linings at low price and small profit. It has won a tremendous sale—it repeats and repeats for the trade—because it has **MERIT**. Cork Insert can be *depended upon* to give smooth, even friction to the last mile of service—to end grabbing and slipping—to give **SURE** braking efficiency—and to last so long that it's cheapest in the long run.

Advance Automobile Accessories Corporation
Dept. J7-1, 56 E. Randolph St., Chicago

Cork Insert Fan Belt for Fords
keeps the engine cool by
keeping the fan fanning.
Better service.
Longer wear.

Ask your jobbers' salesmen about
Cork Insert, and you'll get an
ear full about how it's the
livest thing in the field.



Makers also of
Cork Insert Brake Lining for all cars

CONVENIENT ORDER BLANK

Fill it out and goods will be delivered
promptly through your jobber

Advance Automobile Accessories Corp.,
Dept. J7-1, 56 E. Randolph St., Chicago

Enter our order for

- ☐ doz. sets Cork Insert Transmission Lining for Fords
☐ doz. Cork Insert Fan Belts (for 1917-18 Fords)
☐ doz. Cork Insert Fan Belts (1916 or earlier Fords)

Name.....

City.....

State.....



Help the Government Conserve the Supply of Rubber by selling TIRE-DOH!

¶ **TIRE-DOH** is logical to sell now. Rubber tire production has been greatly curtailed, and during the period of the war it is not unlikely that crude rubber will be found more difficult to obtain.

¶ **TIRE-DOH** fills the bill because it helps the government conserve the supply of rubber, and it enables motorists to get longer life and service from their old tires.

Our Dealer Helps include:

Window Display Cards
Window Trims
Counter Displays
Signs
Newspaper Electros
Circulars
National Consumer Advertising

¶ Never before now—though the previous dealer demand for TIRE-DOH has been very great—have the opportunities for selling TIRE-DOH been "more" favorable. You can cash in and make substantial profits and we will help you "over the top" by our dealer helps.

Don't lose any time in connecting with this proposition. WRITE

Atlas Auto Supply Co.
681 W. Austin Ave.
CHICAGO, ILL.



FIRE-CHOKE

The Chemical Fire Chiefs Recommend



Suppose You Showed Them This Demonstration

Suppose you gave your customers this Missouri test of the effectiveness of Fire-Choke—showed them how two handfuls will put out a gasoline fire like this—would they buy it?

Of course they would.

That is the way dealers are demonstrating Fire-Choke, the new fire annihilator for automobile protection—the most simple and effective thing of its kind—just a dry powder that you throw into the blaze. It instantly forms a gas which smothers the flame. It does not deteriorate with age, fits in a neat bracket, never in the way. It gives better protection at less than half the cost of liquid extinguishers.

Retail Price, \$3.50 and \$5.00

Special Offer to Dealers

Fire-Choke needs distribution in your town. That is why we have a special offer to make if you will stock at once.

THE FLEXLUME SIGN CO.

(Sole Distributors of Fire-Choke)

Niagara St. and Auburn Ave. BUFFALO, N. Y.



THE FLEXLUME SIGN CO.
NIAGARA ST. & AUBURN AVE. BUFFALO, NEW YORK

AMERICAN GARAGE & AUTO DEALER

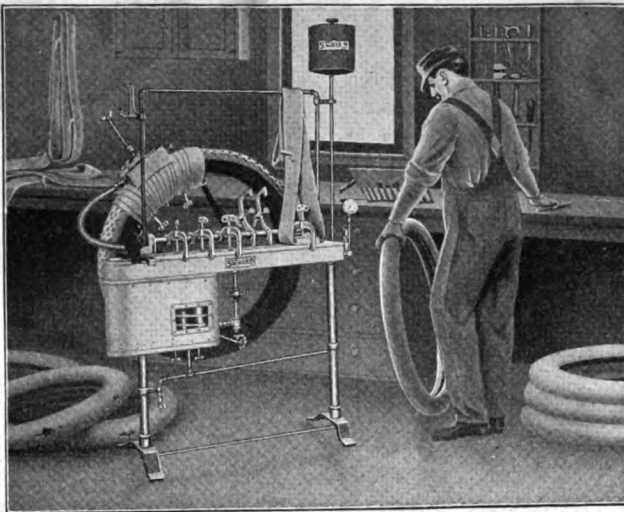


Published Monthly
116 So. Michigan Ave.
CHICAGO, ILL.

OCTOBER

1918

Vol. 9 -- No. 10
10 Cents the Copy
\$1.00 Per Year



Make Money Now Repairing Tires

The increasing cost and limited supply of tires makes it necessary for motorists to conserve their casings and tubes—to get the maximum mileage. Present conditions offer tire repair men a big opportunity to make money—and help win the war. Experienced help is not necessary. A boy can learn how to make perfect tire repairs in 30 minutes. Every car owner in your town is a possible customer. Jobs are plentiful because tires blow out and puncture every day. Motorists are willing to pay liberal prices for repairing punctures, blow-outs, cuts, tears, rim cracks, etc.

SHALER

Steam Vulcanizer for Repair Shops Is the Only One That Has Automatic Heat Control

Will do as much and as perfect work as the large, expensive vulcanizing outfits which cost from \$250 to \$500. The price of this Complete Steam Vulcanizing Plant—heated with either gas or gasoline—is remarkably low—\$70 subject to Trade Discounts. Outfit shown above is Type N. P. R.—No. 41—other models heated by steam or electricity are described in our catalog.

It is portable—easily moved to any part of the shop—occupies but little floor space—a boy can operate it easily and make perfect repairs. The Shaler Patented System of Automatic Heat Control regulates it automatically. It must vulcanize just right. Can't overcure or undercure, and requires no watching or regulating. Large capacity. Repairs 12 casings and 200 tubes a day. Handles any style or size of tube or casing.

The Shaler Wrapped Tread Method of Tire Repairing

is used by all tire manufacturers. It mends casings and tubes quicker, better and at less cost. We furnish Complete Instructions with each outfit. So simple that anyone can do perfect work.

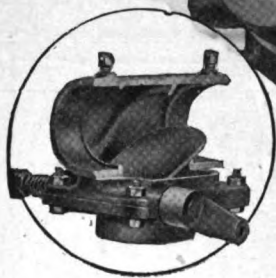
Ask Your Jobber—or Write for Catalog

of the Complete Line of Shaler Vulcanizers
for Repair Shops, Garages and motorists' use

C. A. Shaler Company, 360 Fourth St., Waupun, Wis., U. S. A.

(Oldest and Largest Manufacturers of Vulcanizers)

Sectional view,
showing pat-
ented gas-tight
tongue-valve
open



*"Tells
the motor's
Secrets"*

Show up the sluggish motor

If one of your cylinders lays down, do you know it? Can you tell before the motor starts skipping? If you can't you may be losing power. Power is costly. Let the G-P Muffler Cut-Out be your mechanical ear.

It will intensify the purr of the motor and expose the lazy cylinder. Before the loss gets serious you can check it. It will give you a sweet-running, powerful motor that is a pleasure to drive.

Built so that complete cooling relief is quickly given to the motor. Exhausts gases freely and without possibility of back-pressure. Carbon will not accumulate. Made in two parts. Easy to inspect. Your motor can't go wrong without your knowledge.

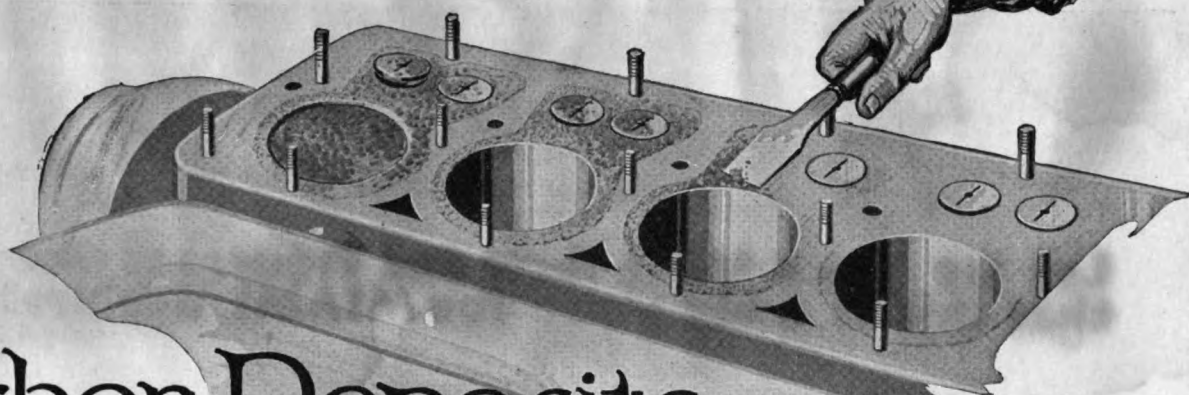
Sales Department

EDWARD A. CASSIDY CO., Inc.
285 Madison Ave., New York City

Manufacturers:

The G. Piel Co., Inc., Long Island City, N. Y.

The G-P Muffler Cut-Out



Carbon Deposits show Wasted Gasoline

THE formation of carbon in your motor is a sure sign of wasted gasoline. For carbon is nothing more than gasoline that has failed to ignite. A portion of this heavy unburned residue goes out through the exhaust as smoke, another portion adheres to pistons, cylinders, spark plugs and valves, forming carbon. Some may leak past the piston rings, thinning the lubricating oil in the crankcase.

Indeed, carbon deposits mean a double waste. You actually pay to have removed from your motor, in the form of carbon, elements that should have developed power to propel your motor.

Producing Power from Carbon-Forming Elements

To reduce the formation of carbon and its resulting disadvantages, you must have more perfect combustion in your motor.

With the heavy grade of gasoline now on the market it has been a most difficult task to produce perfect combustion—until ECCOLENE was formulated. Through its use more perfect combustion is obtained and the carbon-forming elements are converted into power.



This picture shows the proportion of fuel that is wasted when using plain gasoline. It is wasted by not being burned, and a badly carbonized motor is the result.



This 5 gallon can holds 25 per cent less than the one above. By adding 1-3 of the contents of this small 3-ounce bottle of ECCOLENE it will give the same or even more mileage.

The Action of ECCOLENE

ECCOLENE, through a complex process termed decolization, makes gasoline vapor more thoroughly combustible under compression in the motor cylinders. By decolizing the gasoline vapor ECCOLENE transforms a large proportion of the carbon-forming elements; at the same time it assists the process of lubrication.

Thus, when ECCOLENE is added to gasoline in proper proportion, a vapor is produced that leaves no waste—no residue—practically every atom of the gasoline is burned. And the elements in the fuel that would ordinarily be wasted are converted

into power for driving your car. You will find little or no carbon on spark plugs, valves, etc. Moreover, ECCOLENE produces such complete combustion that its use gradually causes carbon deposits to disappear, which, in itself, is proof that these deposits are simply unburned fuel.

Gasoline Economy

Just as ECCOLENE reduces carbon it also saves gasoline by giving more perfect combustion. It enables you to get more miles from your gasoline. It increases power—reduces overheating—lessens smoke and noise and produces better acceleration.

Not An Explosive

ECCOLENE is positively non-volatile, and should be compared in no way to picric acid or ether—two highly powerful volatiles which render gasoline much more explosive and are also harmful and dangerous to use. ECCOLENE is positively non-injurious to any metal. Test ECCOLENE with litmus paper, and prove for yourself that it contains not even a trace of acid.

Results Are Guaranteed

We positively guarantee that ECCOLENE will give you a better performing motor—reduce carbon troubles and save gasoline. We guarantee the increase in economy to be at least 25%. ECCOLENE is sold on a "money-back" guarantee basis.

Sales Prospects

To the live up-to-date dealer who takes advantage of the opportunity offered through the sale of Eccolene, there is the prospect of a huge repeat business. There are over five million motor cars as well as millions of motor boats, tractors, stationary engines, etc., that will continually use ECCOLENE. Make your establishment headquarters for ECCOLENE, and send for sales-getting advertising material, which we will be glad to send you.



RALPH DEPALMA Says:

"It is my sincere belief that the use of ECCOLENE will be a great boon to motor drivers. I have experimented with it in nearly all types and sizes of motors. * * I have also used it in some of my racing cars."

"The results have always been the same—freedom from carbon—clean spark plugs—greater acceleration—motor performance better in every way, and with the carburetor properly adjusted there is a worth-while saving in gasoline."

Detroit, Mich., July 18th, 1918.

"I have used ECCOLENE for several months, and it gave me genuine pleasure to find it producing all of the claims made by its manufacturer."

"I find that in both small and large motors, that the acceleration is improved—that carbon is kept down to minimum—and that gasoline saving is most apparent."

Very truly yours,
Harrison Boyce, Boyce Motor Meter.

New York City, August 7th, 1918.

"I am pleasantly surprised at the results I have secured from your ECCOLENE. I have made four tests with my Hudson Sedan on ECCOLENE and have gotten an average of a little over 15 miles per gallon of gasoline with the few ounces of ECCOLENE you prescribed."

Yours very truly,
Leo Greendlinger, Alexander Hamilton Institute.

Chicago, Ill., July 27th, 1918.

"This is to advise you that, in the Uniontown races of July 18th, I used your ECCOLENE in my Frontenac car, in which I won the Sweepstakes, breaking the track record and making the best time which has ever been made on the Speedway."

Yours very truly,
Louis Chevrolet.

Lawrenceville, Vir., July 25th, 1918.

"I am trying ECCOLENE on Hup 1917 N., and so far it is doing all you claim for it. The motor seems to be fond of ECCOLENE, for I find that instead of the usual sixteen miles to the gallon, I am getting twenty, and on proper adjustment I am looking for more."

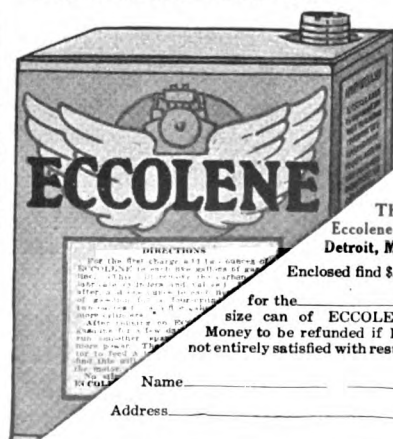
Yours very truly,
Edw. R. Turnbull, Jr., Turnbull & Turnbull.

Prices
1 Quart \$2.00
1 Gallon 7.00

For the convenience of truck fleet owners, ECCOLENE is also put up in five-gallon cans.

Sales Department
EDWARD A. CASSIDY CO., Inc.
Madison Ave. at 40th St.
NEW YORK CITY

THE ECCOLENE COMPANY
Manufacturers
DETROIT, MICHIGAN



The Eccolene Co.
Detroit, Mich.

Enclosed find \$_____

for the _____

size can of ECCOLENE.
Money to be refunded if I am not entirely satisfied with results.

Name _____

Address _____

It's a simple matter for YOU to "talk business" when YOU are representing MIAMI TRAILERS

Let us send YOU facts and figures to show that this is a big year for MIAMI dealers!

A dealer to make money for himself must be able to sell a popular necessity. MIAMI TRAILERS are "essential" both to war-time business, as well as to peace-time business, and they are very popular.

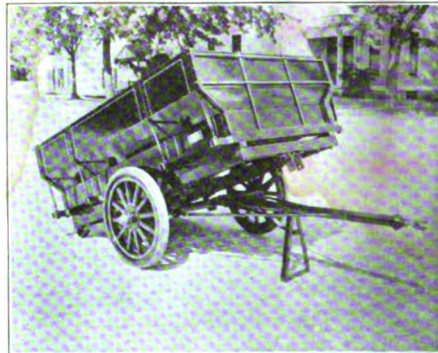
MIAMI dealers never have any trouble to "talk business" and invariably this has been their biggest year. There's a model or style trailer for every business, and for every pocketbook.

If you have been a passenger car dealer and you are up against it for something to sell or to keep your sales force together—MIAMI TRAILERS are the practical and permanent solution of your worries.

Give us an opportunity to talk business with YOU!

It will only take a few minutes to show you that it's worth your while.

Miami Trailer Co., Troy, Ohio, has received an order from the city of San Antonio for eighteen two-wheel trailers to be used by the street cleaning department. This is the third order received from that city during the past year, and will make a total of fifty-four Miami trailers owned by San Antonio.



**THE MIAMI TRAILER COMPANY
TROY — OHIO**

Motorists Will Be Glad to Know About This—

The only invention that gives the automobile a trouble-proof tire with pneumatic resiliency—the **perfect substitute for air**.

The National Rubber Tirefiller takes the place of the inner tube, never blows out, saves worry, time and expense and doubles the life of the tire.

This Tirefiller is made of the finest quality of pure rubber treated under special processes, never gets "flat" and will last indefinitely.

One motorist says: "I would not do without it. Never bothered with punctures, blowouts, etc., and don't know what tire trouble is with use of your Tirefiller."

National Rubber Tirefiller is an accessory worth selling—it pays big dividends. Write for full details.

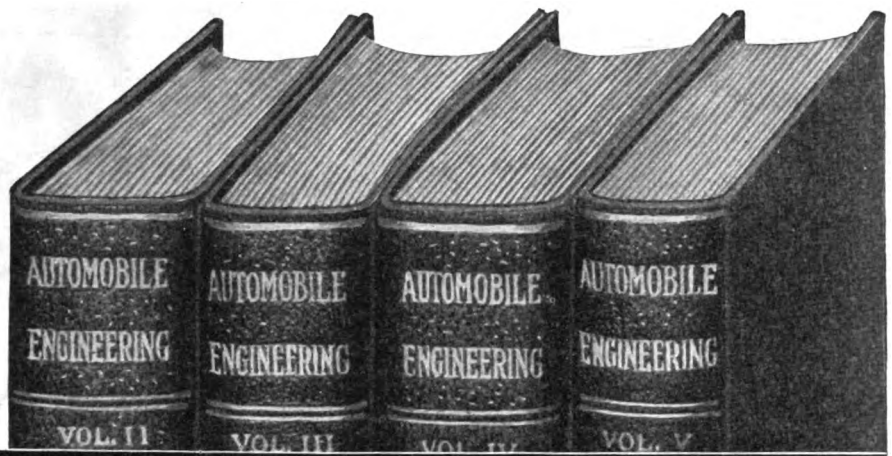
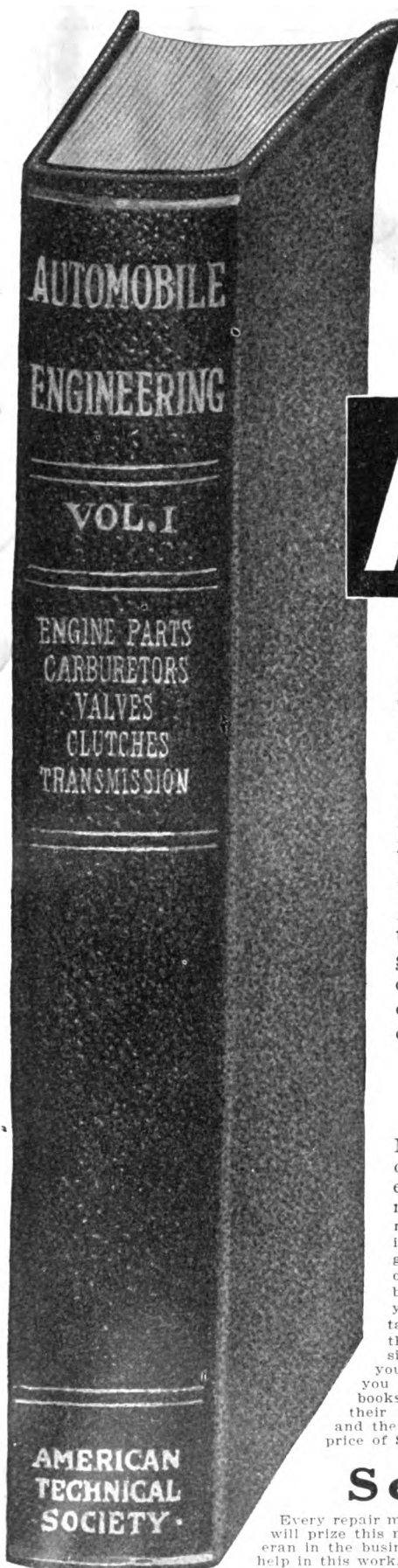


National Rubber Filler Co.



MIDLOTHIAN TEXAS.





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1918 EDITION

Now ready for you — this marvelous five volume Library on Automobile Engineering! The newly-written reference work covering the construction, care and repair of pleasure cars, motor trucks and motorcycles. The most complete and advanced information in Ignition, Starting and Lighting Systems, Garage Design and Equipment, Welding and other Repair Methods. Five wonderful volumes beautifully bound in flexible covers, gold stamped. 2400 pages (5½x8¾ in.), 2000 illustrations, tables and explanatory diagrams. This great automobile library, combining the knowledge of the greatest experts in the business, now yours on payments so small as to average only 50c a week, or only 7c a day.

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Help Win the War

BY STEADY WORK
FULL TIME
SIX DAYS A WEEK

U. S. Dept. of Labor

W. B. WILSON
Sec'y of Labor

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Explosion Motors
Welding
Motor Construction (and)
Repair
Carburetors and Settings
Valves, Cooling
Lubrication
Fly-Wheels
Clutch
Transmission
Final Drive
Steering Frames
Tires
Vulcanizing
Ignition
Starting and Lighting Systems
Wiring Diagrams
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Please send me the 5-volume Automobile Engineering for 7 days' examination, shipping charges collect. If I decide to buy, I will send \$2 within 7 days and the balance at \$2 a month until the \$17.80 has been paid. Then you send me a receipt showing that the \$25.00 set of books and the \$12 Consulting Membership are mine and fully paid for. If I think I can get along without the books after the seven days' trial I will return them at your expense.

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Every repair man, every auto mechanic, every auto driver and owner will prize this magnificent library. Even the most experienced veteran in the business will find a wealth of practical information and help in this work. Prove their value to yourself at our risk. See the books without cost or obligation to you. Not a cent do you risk by sending the coupon. So do it today—NOW—while this special offer is open. You have nothing to lose, and much to gain.

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FREE Consulting Service. With each set we give you free, a year's Consulting Membership in the American Technical Society. The regular price is \$12. Put your problems up to our Staff of Experts, for one entire year.



Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

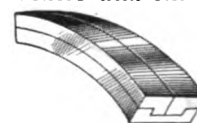
Ever-Tyte Bill

Says:- Everywhere you go now, you hear guys talkin' about "SERVICE."

A lot of guys are workin' poor old "Service" overtime.

I ain't the wisest guy in the world but this Service Stuff looks to me like just doin' things right and prompt, and not tryin' to stick the other feller.

Cannin' the chatter fer a minute—A guy workin' around "buzz wagons" soon gets wised up to the "gold brick" guys and the fellers that have the real goods—there's one thing I'll gamble on—there ain't no better Piston Rings made than "EVER-TYTES"—they've come through fer me every time.



RIGHT ANGLE INTERLOCK

The EVER TIGHT PISTON RING Co.
1609 KINGSLAND AVE. SAINT LOUIS

You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

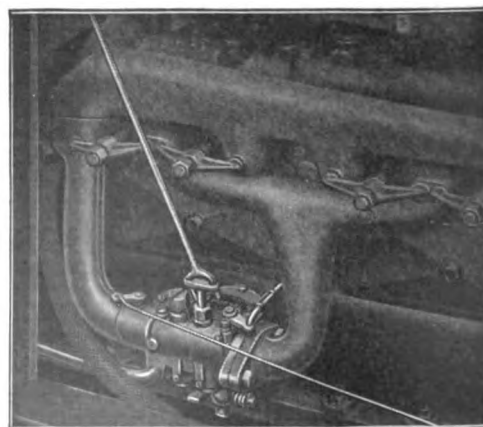
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

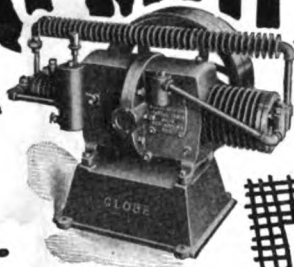
MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



Globe Compressors



**Before you buy
an air compressor—
it will pay you to
look into the merits of the
Globe**

This equipment has become very favorably known among garagemen for giving the best service at the greatest economy of power.

***Any garage which uses a Globe
Air Compressor - speaks highly of it***

The accompanying letters are two of the many voluntary testimonials which we receive almost daily. GLOBE AIR COMPRESSORS give long service and clean oil-free air. No impurities can reach the tire. Fill in the coupon below and send it in.

**Globe Mfg. Company
BATTLE CREEK — MICH.**



Globe Manufacturing Co.,
Battle Creek, Michigan.

Gentlemen:-

Inclosed find our check for _____ in payment of the two remaining notes on Air Compressor, and will say that the machine is giving the best of satisfaction, and we can recommend your goods to any one who is contemplating the purchase of Air Equipment.

Assuring you that if we need anything in your line we will be sure to call on you, we remain

Yours very truly,

(Name on application.)

Globe Manufacturing Co.,
Battle Creek, Mich.

Gentlemen:-

We have just completed the installment of our GLOBE Pump and are using a 90 gallon tank as a container for the air. We find that the pump will fill this tank from nothing to 135 pounds pressure in quite a little less than a half an hour, to be exact about 15 minutes. We have it set so it will start pumping at 100 pounds and shut off at 135, and in using the 90 gallon tank we find it only takes five minutes to pump this 35 pounds of pressure. If it keeps on working saying that the saving of electricity used with this pump will almost pay the cost of it in a year to say nothing of the convenience of always having air up. We will say that we are satisfied, and putting the case in a very mild way, it certainly works like a charm.

Yours respectfully,

(Name on application.)

MAIL INFORMATION COUPON

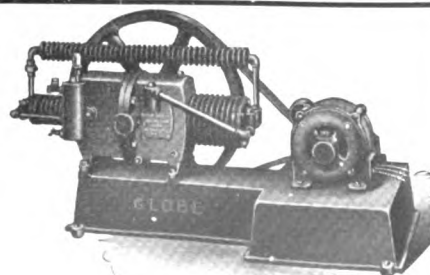
GLOBE MANUFACTURING COMPANY, Department B2, Battle Creek, Mich. A. G. & A. D.

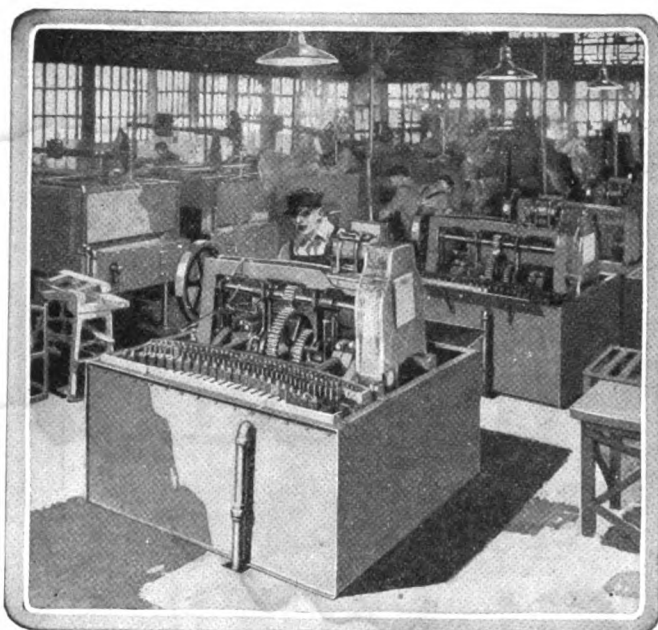
Gentlemen: Without any obligation on my part, please send full information on the items checked (x) below:

- ☐ Air Compressor for Line Shaft Drive. ☐ With Motor.
☐ Air Compressor for Direct Motor Drive. ☐ With Motor.
☐ Automatic Air Plant for Free Air. ☐ With Motor.
☐ Air Compressor with Air Cooled Gasoline Engine.
☐ "DEAD EASY" Tire Pump for resale.
☐ I have or can get Electric Current. ☐ Single Phase. ☐ Two Phase. ☐ Three Phase. ☐ Direct.
☐ Voltage. ☐ Frequency. ☐ Cycles.
☐ I have power ☐ Steam H. P. ☐ Gas Engine H. P. ☐ Electric Motor H. P.
☐ I have a ☐ Garage. ☐ Tire Shop. ☐ Machine Shop.

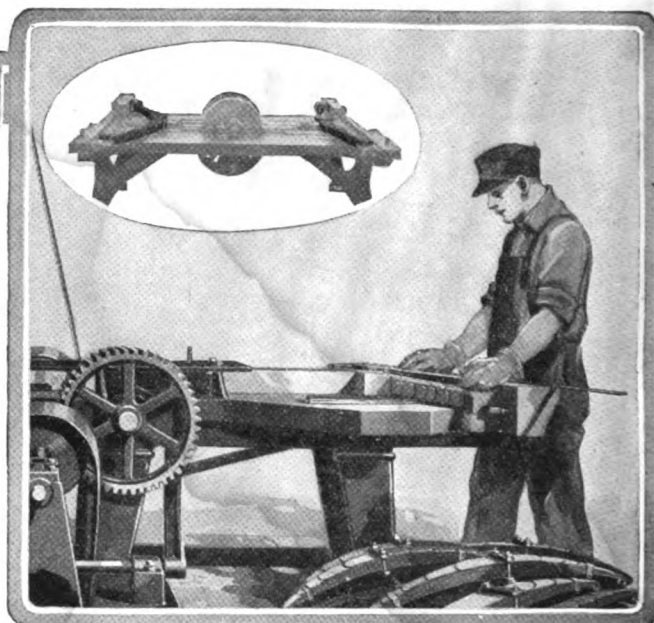
Name _____ Date _____

Address _____





FORMING and TEMPERING



TESTING FOR ACCURACY and ENDURANCE

Resiliency·Endurance·Accuracy

A REPLACEMENT SPRING, to be worth its price must combine three things: Resiliency, Endurance and Accuracy. And of these three Accuracy is the most essential.

A spring must "fit like a glove" if it is to be resilient and durable. It must "fit like a glove" if it is to give satisfactory service.

Your business as a repair man depends on your ability to give satisfaction to customers. Our business depends on your success and patronage.

Knowing this, we have built our

business on one policy: Satisfaction to Car Owners—Satisfaction and Profit to Dealers.

The Harvey Process is but a part of the Harvey Policy. Harvey Springs are scientifically made from the best spring steel obtainable. They are so carefully made and so thoroughly tested in design, material and workmanship that Resiliency, Endurance and Accuracy are absolutely assured.

If you are not already selling the Harvey Springs you should get in touch with us at once. It means satisfaction to your customers and profit to you.

There's a Harvey Jobber near you. Drop us a card and we will send you his name and our Spring Book containing specifications etc. of over 900 kinds of springs. Write today, you may need Harvey Help tomorrow.

Harvey Spring & Forging Co.

922 17th St.

Racine, Wis.

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Comprising
AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGA-
ZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX, No. 10

CHICAGO

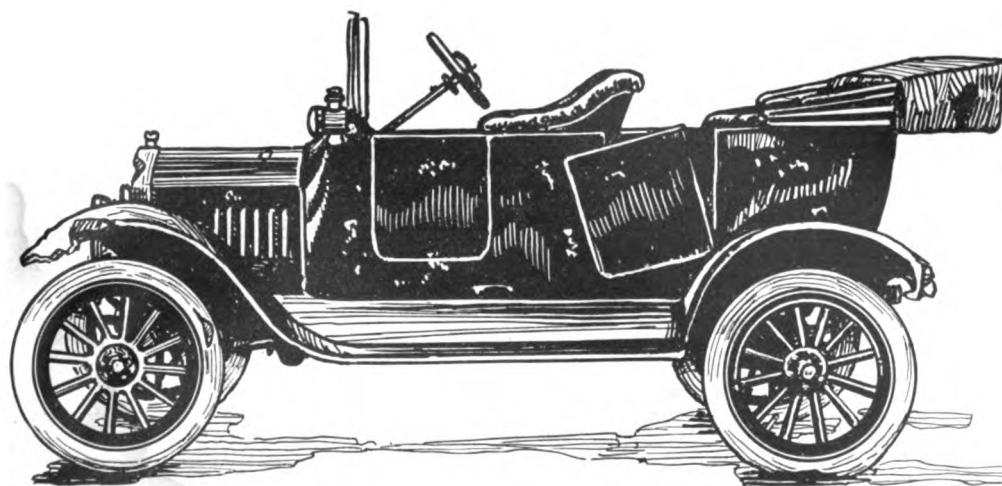
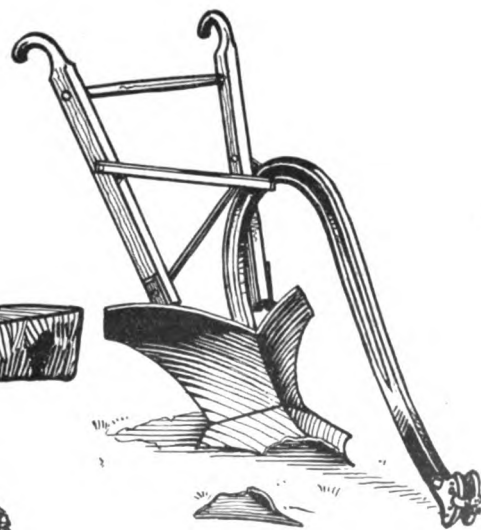
October, 1918

Any rags—any bottles —any pans to mend?

Repair business in the automotive industry is thriving at present. Because new passenger cars are scarce, old cars are being overhauled as fast as they need attention. And so it is with trucks, tractors, plows and everything else that can be mended and continued in service.

Conservation of time, labor and materials is urged on every hand, and nowhere are the American people exemplifying a more patriotic spirit than in the automotive industry, where they are foregoing the pleasures of new cars by economizing to the extent of using the old, all of which has conduced to make the Garageman and Repairman a very popular and prominent personage in his community.

SO MAY IT BE WITH YOU.



Boston Show Manager Believes Local Exhibitions Should be Held

Thinks Displays Are Patriotic Necessities, But Advocates Dates When Buildings Require No Heating

BY CHESTER I. CAMPBELL,
Manager Boston Automobile Show.

"To have a Show or not to have a Show." That seems to be the important question in the minds of the manufacturers as well as the automobile dealers in the large cities. The action of the National Automobile Chamber of Commerce against holding shows is receiving both favorable and unfavorable comment among the trade.



Chester I. Campbell.

There is not a dealer but what would say "Amen! and Amen!" to that if that thing would tend towards winning the war. There is not a dealer or a manufacturer but what would approve of that action if it were necessary to cease entirely, not only the manufacture of automobiles, but the use of them.

The time has long passed when the automobile is even considered a vehicle of pleasure; it is strictly a passenger car now, and it is estimated that nearly ninety per cent of the cars used are used for business purposes. The fact that a business man uses his car during the day to save time in conducting his business and for various other business requirements, does not lay aside the claim that it is a car for business simply because he may use it for a few hours some evening for what might be termed pleasure driving.

We all approve the action of the Government in curtailing the output of the various factories as we have their word for it that the facilities of these factories are needed for war work. But the automobile business has not ceased, and while the production may be very materially reduced the fact still remains that there will be a production both in passenger and commercial cars.

When the war is won those manufacturers who have turned large portions of their plants over to war work will desire to resume their automobile work, and the production then will increase as the demand warrants.

It is a proven fact that the interest in automobiles each spring has been materially increased by the shows, more

especially those held by the various dealers' associations in numerous sections of the country. That the statement which the dealers have made for years past that the automobile was a necessity and not a luxury, that it was shown to the business interests that it meant the saving of money and time to the business man, is of sufficient importance, in my opinion, to warrant the automobile dealers in holding their shows in 1919.

I am not willing to admit it is unpatriotic, just as I am not willing to admit that the automobile is a "non-essential." If I admitted the latter I must admit the former.

The newspapers of our country have been most generous in their publicity in years past, due to the support which the manufacturers and dealers have accorded them. The annual automobile shows have added much towards securing their co-operation and as publicity of the right sort it is of vital interest to the automobile world that this item should be taken into consideration when we go so far as to say we will cut out the automobile show.

It is unnecessary for me to remind many of the older dealers who were interested in the bicycle business, that the downfall of that business was due to the fact that the powers who controlled the trade at that time felt they were big enough and strong enough to handle the business without publicity, advertising and shows. The result is clearly evident by the condition of the bicycle business today.

There is, however, one good argument against the holding of the shows, and that one is in reference to the consumption of coal for heating purposes; but that can be easily adjusted by holding the shows a little later in the spring when practically no heat is required.

I hope the automobile dealers' association in the various parts of the country will consider the matter very carefully, and while I would be one of the last ones to advise anything which might savor of unpatriotism, I am convinced in my own mind that we would be doing an injustice to many of the working men and an injustice to the public, not to continue to show, even though it may be found impossible to exhibit strictly 1919 or 1920 models. Let us keep the interest in the passenger car and the commercial car as near as possible up to the standard, consistent with war conditions.

"I wish I had advertised during the war" is going to be a familiar quotation just a little while from "Class."

Statements on Show Question

F. W. A. Vesper, Buick Dealer, St. Louis

It is my personal opinion that any attempt to hold an Automobile Show during the coming winter, either national or local, would be a mistake for several reasons. First, because it would be practically impossible to hold a show, under present conditions, that would be credible when compared with shows held in the past and as a consequence would reflect discredit on the industry, which first of all should, in my opinion, be avoided for unless a show is a show in every particular and is put on in a manner that will do credit to itself, especially now, it had best not be held at all.

In the second place, the fact that a great many factories have already publicly announced the fact that they are 100 per cent in war work and will not produce any more cars until the end of the war, would in itself greatly reduce interest in a show because at best it couldn't be complete and therefore the public, who have in the past gone to automobile shows in order to compare cars would naturally lose interest and besides this, would get the impression that those who did show were unpatriotic in that they had disregarded the request of the Government to go on a 100 per cent war basis.

In the third place, the holding of a show, in view of the extended publicity given to the request from Washington that exhibitions of this kind be discontinued, would have a particularly bad effect, as it would indicate in the minds of the average citizen not familiar with the patriotic and whole-hearted support that the automobile industry is giving in the war program, an idea that the industry was defiant and not disposed to inconvenience itself even in times like these.

From a publicity standpoint the discontinuance of the show temporarily will have no bad effect, for the automobile is so well established as a utilitarian vehicle and its use has become so necessary that it is safe to say that such automobiles as may be manufactured during the period of the war will require no special publicity, such as a show gives, to dispose of them.

I cannot but feel that any agitation opposing the discontinuance of automobile shows at this time, in view of the circumstances, is unwise. However, I do not voice this as the sentiment of the National Automobile Dealers' Association, but merely by own personal opinion.

Prince Wells, Nash Dealer, Louisville

Our Association members have decided that they did not think it was a good idea to hold an automobile show during the war. While there may be some arguments, for and against holding a show, nevertheless we have decided not to argue the point, but to do all we can to help the one big show—win the war—and as quickly as possible.

E. V. Stratton, Hudson Dealer, Albany, N. Y.

There seems to be some logic in Mr. Campbell's ideas in regard to the show question.

I am unable to see any reason for definitely deciding at this time to do away with automotive shows. Why not wait until we get somewhat nearer to the time they are usually held, and see what the situation is at that time. That would be my idea in regard to it.

A. C. Heath, Chalmers Dealer, Ft. Dodge, Iowa

It seems to me that so long as our country is at war and so long as our country demands the entire output of our automobile factories in the shape of war munitions, material, etc., that regardless of what we may deem advisable the one and only thing to do is to cut out the automobile show until such time as our factories are permitted to produce newer and more up-to-date models than those we now have.

Fort Dodge was the first to decide against the automobile show. We did this over a year ago and invested the estimated cost of our show (\$10,000) in Liberty Bonds. At that time there was some criticism on the part of factories but I am very certain that all Fort Dodge dealers felt that they had done the right thing at the right time and I believe our Boston friends would do well to follow this example. Later on, the amount invested in Liberty Bonds can be returned to our automobile show fund but for the present we here are all satisfied to leave the show out of it.

I would say that in the event any association might decide to have a show, the time should be set as late in the fall as possible unless fuel conditions should make it possible to hold a winter show. I am a firm believer in the winter show because at that time we all have more time to talk show and then again it comes just in advance of the buying season when people are looking for the car.

Q The highways are the natural lines of communication between the rural districts and the centers of population. The wealth of our soil can be brought over them with dispatch, insuring ample food supplies at all times.

Q With the extension of Rural Motor Express Lines will come better and safer highways.

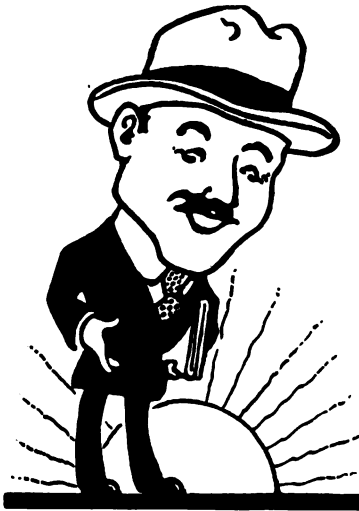
Q The highways are the arteries through which flow our commerce, the life blood of the nation. They should be built strong enough to carry that commerce, and in times of war serve as military highways, that that commerce may never for a moment cease, but flow on uninterruptedly, supplying the nourishment necessary to the sustenance of life, to the victory of our arms and the glory of our flag.

—National Motor Truck Committee.

What Kind of a Salesman —Are YOU?

If your business as a garageman, repairman, or automotive dealer has succeeded and you have prospered, the chances are that you followed the "right" pathway as a business man, either consciously or unconsciously.

But, if today you are no better off



financially than you were 5 or 10 years ago, better examine yourself—something must be wrong—the probabilities are that the fault is yours and not that of your business.

In every line of business there are some "beacon lights" or men who have made a success because they plodded and worked, ever conscious that they were endeavoring each day to do their very best for those whom they served, as well as for themselves.

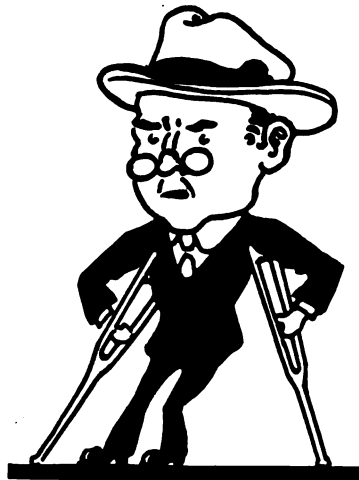
Many men bemoan their fate, and condition—they are quick to say that "the horseshoe" is not for them—that everything is against them—a little retrospection would reveal that they were absolutely to blame for their lot.

There are many types of salesmen—good, bad, and indifferent. It is vitally important that you belong in the correct group. Your success depends solely on your ability to convince others of the character and value of your proposition. Regardless of whether you are selling your personal services or you are merchan-

dising some article or proposition—you loom up in the background as the principal factor.

Some salesmen scurry to cover as soon as the raindrops fall. At the first sign of bad weather, they lay down on the job. Did you ever get up in the morning with a sour taste in your mouth—and your stomach seemingly out of order? Well, there are some salesmen who always act like that. They work spasmodically—only when they feel like it, and that isn't very often.

Does this type hit you? Be honest with yourself—do you allow the weather to take advantage of you, *or do you take advantage of the weather?* Many successful business men in the automotive industry, who are either



garagemen, repairmen, or automotive dealers, do *not* allow weather to deter them. They take advantage of the weather and exploit the sale of seasonable accessories. Instead of quitting and laying down on the job—they put on more steam. *You can do many a profitable job in the garage or repair shop, on a rainy day—if you are no quitter.*

There's the poor broken down old salesman who is always leaning on EXCUSES and PROM-

ISES but who never delivers. He lacks initiative, will power, enthusiasm. He's a grumbler. He can never make a sale because every possible sale he could make, he just literally chases away because of his frigidity.

This is the type of man—and there are some of them in the automotive industry—that is like the rudderless ship—he just wanders around in circles, whereas, on the other hand, and thank goodness!—there are many garagemen, repairmen, and automotive dealers, who are making a good name for themselves in their communities because they regard every day to be a busy and successful day. They possess purpose, cordiality and intelligence. They have early acquired the habit of thinking and acting for themselves—and thus, are able to impress others with their judgment and knowledge.

The "sun shiny" salesman is a good fellow to pattern. He has a contagious personality. His handshake and smile reflect that he likes you. Wherever he goes and he goes everywhere, that there is any business to be had—his trade "warms up" to this fellow.

"Be of good cheer" is his creed. He is impressive—he has made a



study of every phase of his business—he uses perspiration—has sincerity—in short, everything calculated to make a good salesman.

And it is of vast importance that YOU measure up to the standards of a good salesman. *The contents of your cash register, be they large or small, depend on you.* Give yourself a chance! You deserve more. You

can do better. Don't be satisfied with your lot—GROW BIGGER. While there are some "grumblers" right now in the automotive industry, others are cleaning up because they have broadened out and acquired new lines to sell, such as trailers, tractors, truck units, power and light plants.

Automotive dealers, garagemen, and repairmen who have vision, courage,

pep, determination, and optimism are the sort who will always see the "silver lining" in the cloud—these are the type of men—of salesmen, who can master every conceivable kind of situation, and who gallop down the "home stretch"—pronounced a success, while others are just getting started. *Be sure that you are the right kind of a salesman.*

TEAM WORK!

In Boston recently the "Red Sox," or the Boston American League Baseball team, annexed the World's Championship because they displayed better team work than their opponents, the "Cubs," though both teams were evenly matched, with possibly a shade 'in favor of the latter, judged by their consistent season's playing. *But team work*, or the ability to play and work together, was better exemplified by the Boston team—and they just naturally won.

Right now the government is hard at work to win the war. All departmental activities are ceaselessly engaged. Production is being speeded up. Every man and woman is being called upon to do his or her part. Discontent is frowned upon—enthusiasm and hard work are welcomed and appreciated, and rewarded.

Charlie Schwab got instantaneous results in ship-building, because he was a general when it came to team work. And, so can every man make a success if he understands team-work.

The foregoing introduction is for your special benefit. It has a direct relation to you and your business.

Now, more than at any other time, must you practice team-work in your business and among your employees.

All must pull together—each must do his or her part. The business slacker or worker is not to be tolerated any more than the army deserter.

Possibly on your service flag are the stars of several of your faithful workers who have joined that mighty army "over there." Probably more will be called on the next draft.

Team-work will keep your business together and will keep it growing, if you will faithfully practice it.

Shortage of help means that you still must strive to give your customers the very best sort of service. Don't let there be any "slip-up"—try to give even better service. Do everything that you can to keep your customers' pas-

senger cars, trucks, tractors, trailers and truck units, operating to the fullest extent.

Though sometimes war legislation might seem to be taking a "wallop" at your business, it is never as bad as it first appears to be—readjustments are many—and in the end you perhaps will still be making more money than ever before.

This is the era of opportunity for the garageman and repairman and automotive dealer. For the duration of the war, new passenger cars will be very scarce, but as people will continue to drive their old cars, repairs and replacements will be continually necessary.

For this present and future repair business, mobilize your working force so that it will be alert, capable, and efficient.

Keep posted on current events. Read your trade journals carefully. Study how your competitors are meeting wartime conditions. Study how best you can organize and reorganize to meet changing conditions.

This is not the time for discouragement but encouragement. You can do a "landslide business" if you will prepare for it. Others are, so why can't you? The up-to-date garage and repair shop which has the reputation for rendering the best service has "the edge." You can be the "favored" place of business in your neighborhood or locality by impressing upon the people in your community that prompt, courteous and satisfactory service can be expected of you at all times.

Repairs lead to replacements, and also make it easy to promote the sale of accessories.

By studying how best you serve each individual customer who brings his troubles to you, you will also be doing yourself a good turn, as his satisfaction is your profit.

So, don't envy your neighbor—or competitor—if he is getting more trade than you are—perhaps he too is a better player than you when it comes to team-work.

Trailer Business Has Grown Up, Is Substitute for Car in Sales

Both Motor Truck and Passenger Vehicle Dealers Taking Orders that Can Be Filled

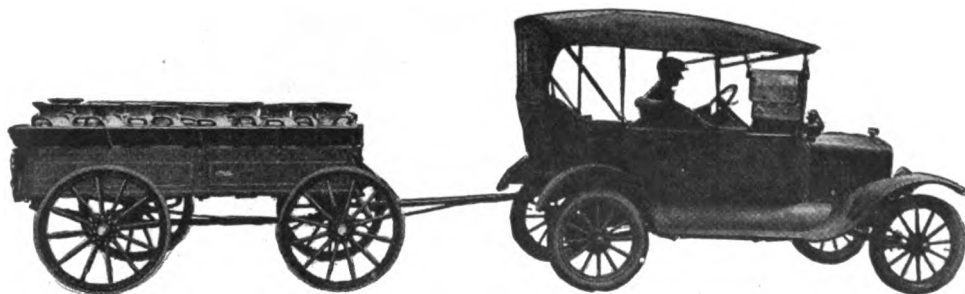
BY W. F. JOLLEY,
Secretary and Treasurer,
Miami Trailer Co.

Times have changed—no longer is the trailer looked upon as a “swaddling infant.” Today finds the trailer business a full-fledged grown up.

The day of education has passed—any wide-awake business man who has a transportation problem to solve will be found immediately appreciative of and receptive to the apparent merits of the trailer.

And so it was quite natural when pressure was placed on passenger car manufacturers to release their factory production for war work, that dealers who had been selling passenger cars only should cast about for something appropriate to sell, which would not only be profitable and popular, but which would serve the added purpose of holding their sales organization intact.

To many dealers it seemed that the trailer was a god-send. *It was the substitute for the passenger car.* Simple of construction—no mechanical parts to get out of order—no motor—no transmission—it simply had to sell itself on demonstration. Naturally, then, the trailer was the “logical” substitute—it was not a luxury in any sense of the word—but a war-time and peace-time necessity.



Trailer Working for a Creamery.

That the trailer would soon justify the contention of various manufacturers that it was economical of operation, dependable under any or all circumstances, was a foregone conclusion. It is also gratifying to note that there is a widespread conversion now among dealers and truck manufacturers to the knowledge that the trailer is a helpful auxiliary to their truck and passenger car, and not an impediment as formerly intimated.

When the motor truck return-loads movement was inaugurated, the trailer soon established proof that it was the “missing link” in the transportation problem. It was quite obvious that a fleet of trailers could be kept in service to and from the point of destination—some being loaded ready for use on the return trip.

From the standpoint of the real small dealer, the trailer is also a capital investment, as his initial financial outlay is considerably less when he stocks up with a trailer proposition than when he handles passenger cars.

From the psychological sales standpoint, the trailer again certifies its value—the old saying is true that if you can successfully appeal to a man's business, you can readily loosen his purse-strings. Any business man will not hesitate to invest money in a legitimate money-saving—money-making—business proposition.

Experience of many dealers has shown that the trailer is the ideal proposition for any dealer, as the selling resistance is practically nil—the opportunities for making liberal profits are splendid—and **THERE ARE PLENTY OF TRAILERS TO SELL.**

What better proof need we offer that this is the day for trailers, than to merely refer to the fact that most all trailer manufacturers are busier than ever before.

Take the case of the Miami Trailer Company of Troy, O., for example. Already this year, we have more than doubled our factory space and now are negotiating for increased acreage, so that we can further expand to provide for the growth of our business. Miami dealers are keeping us exceedingly busy these days to satisfy their

requirements. And the orders which they send us are not for one or two trailers, but quantity orders—which embrace as many as four or five hundred trailers at a clip. The trailer is penetrating into *every* line of business, as we have designed a number of new models this year in ad-

dition to those we already had.

Many dealers are now thankful that “the pinch” came on passenger cars, for it opened their eyes to the gratifying knowledge that they were blessed with a fortunate proposition to sell—“the trailer”—that would be just as profitable ten years from now to sell, as it is now—in other words—a proposition was offered to them which was not only an admirable substitute for the passenger car, but one which will be *permanently retained in the sales organization* because it's an all around the year seller besides a proposition which will appeal to any business man who desires to make his transportation more efficient, productive, punctual, and economical.

Accessories Sell Well at Pier Show

Exhibitors of accessories at the Automotive and Accessories Exposition on Chicago's Municipal Pier expressed themselves as much pleased at the number and volume of sales made from September 14 to 21. The tractor and truck concerns did not fare quite so well as the accessory firms.

It has been reported unofficially that the show management has already begun planning for another exhibition for next year. It is said that it will not be held on the pier, however, as the attendance was not as large as had been expected.

Atlas Auto Supply Co.

One of the interesting exhibits at the recent Automotive & Accessories Exposition at the Chicago Municipal Pier, was that of the Atlas Auto Supply Co., 681 W. Austin avenue, Chicago.

This firm, which is one of the oldest and best known accessory manufacturers in the industry, has always had the reputation for doing things thoroughly and its exhibit rivaled in excellence any other they have hitherto had.

TIRE-DOH was one of the principal products the Atlas concern displayed, which was very apropos, particularly in view of present conditions. TIRE-DOH, however, needed no introduction to the trade, as thousands of dealers and jobbers all over the United States are selling it—but TIRE-DOH never forgets its old friends, hence could not allow this occasion to pass without giving some visible expression of its appreciation for the interest and support which the trade gives it.

To those who are not familiar with TIRE-DOH, let it be said that TIRE-DOH is used for repairing tires, tubes and casings, which it does easily, quickly and permanently without vulcanizing. No heat or tools are

required to apply TIRE-DOH. *Wherever it is needed—simply knead it!*

TIRE-DOH is a logical accessory to sell now because it helps the government conserve the supply of rubber and enables motorists to get longer life and service from the old tires. TIRE-DOH dealer helps include: Window Display Cards—Window Trims—Counter Display Signs—Newspaper Electros—Circulars—and National Consumer Advertising.

Further dealer particulars may be obtained by writing the company direct and mentioning the AMERICAN GARAGE & AUTO DEALER.

Spee Dee was another specialty exhibited at the Automotive Show by the States Chemical Co., 681 W. Austin Avenue, Chicago, which shared the booth of the Atlas Auto Supply Co.

Spee Dee is a preparation which cleans dirty, greasy, grimy hands with or without water, and effectively washes automobiles, trucks, and vehicles.

Above exhibits received the personal attention and supervision of President Charles Day and General Sales Manager John Rosenberg.

Consolidated Utilities Corporation

The Consolidated Utilities Corporation of Chicago, manufacturers of lighting plants for country homes, farms, and garages, displayed four different models for electric lighting plants in actual operation, fully connected up with all of the appliances used on the up-to-date farm.

This exhibit showed how the modern farm is run by electricity; for not only has the farmer the same conveniences as the city man with lights in his house, barns and out-buildings, with an electric fan on the table, but the housewife does her washing and ironing by electricity, operates the churn and cream separator, sweeps her carpets by electricity; and has running water exactly the same as in the city home.

Farmers representing many states in the Union have already placed advanced orders for a new plant which was exhibited for the first time, named the "Little Husky." This plant will fully light and furnish power for the average sized farm. It is automatic, starts and stops itself, with "not even a button to press" and sells for \$395.

Not only is the Consolidated plant a luxury on the farm, but a permanent improvement. Automobile dealers are finding the farm lighting business a very profitable one, it is an article for which the demand has already been created.



ACCES\$SORIES

By M. E. FABER

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We pointed out the fact that the waste due to non-use of these circulars meant far more in the loss of profits than the merchant might just as well have than was represented by the mere cost of the paper and printing.

Uncle Sam believes that economy of printed matter is of vital importance in winning this war of ours, as is evidenced by recent action of the War Industries Board.

Paper manufacturers who wish to obtain a place on the list of preferred industries have signed the following conservation pledge:

"The undersigned hereby pledges itself

"1—To co-operate with the Conservation Division and the Pulp and Paper Section of the War Industries Board to economize in the use of pulp, paper, printing, ink, and printers' rollers and all products manufactured therefrom, and in the use of transportation facilities;

"2—To cause and persuade others, so far as lies in its power, to exercise all possible economy and conservation in the use of such products;

"3—Not to furnish such products to any dealer for resale or to any consumer for use until such dealer or consumer shall first pledge in writing its co-operation with the undersigned in carrying out the spirit and letter of this pledge, or thereafter should such dealer or consumer fail to co-operate."

Printers, under the terms of the third paragraph of this pledge, are required to sign the pledge in order to receive their supplies of paper, and they in turn must require *their* customers to comply with it.

To carry out completely the spirit of the request made by the War Industries Board, the manufacturer who supplies printed matter to the dealers who handle his lines must first secure their pledge that it will not be wasted. So, if you are asked to sign such a pledge, don't let it frighten you. Remember that clear down to the paper maker, there is a chain of co-operation which it is your patriotic duty as well as to your financial advantage to join.

The Government does not ask you to *use any less* printed matter, but it does ask, and justifiably, that you *use it more effectively and without waste.*

Ask for the advertising matter you will use—and USE IT.

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handling or who desire to handle Spee-Dee.

Spee-Dee is gritless, harmless, and pleasant to use. Dealers testify that this necessity is a big seller. Spee-Dee is not a soap, not a powder, and not a liquid but is a speedy cleanser which does the work. All jobbers sell it, but further particulars can be obtained by writing the States Chemical Co., 681 West Austin Avenue, Chicago, and mentioning the AMERICAN GARAGE & AUTO DEALER.

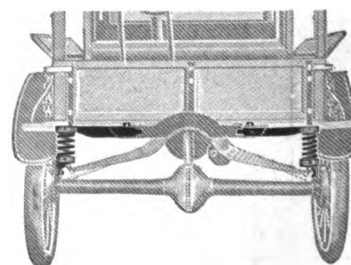
ALFORD ATTACHMENT CONVERTS CARS INTO TRUCKS.

The Alford auxiliary spring attachment is a new device for converting a Ford passenger car into a truck at a very low cost. It attaches to the rear axle as shown in accompanying illustration. The work of attaching can be done in about thirty minutes, as there are no holes to be drilled.

In addition to converting Ford cars into trucks Alford springs can be used on any Ford where additional spring tension is required.

This spring is made to absorb the road shocks which ordinarily fall on the tires and rear wheels. All the weight is carried on the frame and springs and none on the body of the car. They thus increase mileage and the life of the car as well as affording easier riding.

The price at \$16.00 is one which should appeal to Ford users strongly in view of



the important functions that Alford springs perform. They are sold on thirty days' trial with a money-back guarantee. The manufacturer, Andrew Hoffman Mfg. Co., 5034-6-8 South State street, Chicago, will be glad to send dealers full particulars upon request.

Car Making Plants Being Turned Over to Government Production

Automobile Manufacturers Discuss Standardization of Solid Tires for Trucks and Conservation of Materials

Evidence of the manner in which the automobile industry is converting to war work, was shown at the meeting of the National Automobile Chamber of Commerce at New York, October 3, when the Traffic Committee's report showed carload shipments of automobiles for the month of September to have been only 11,700 as compared with 20,538 for the same month last year. One plant after another is converting to war work as rapidly as possible, some of them with 25 per cent of capacity for the government, with others on a full 100 per cent basis.

It was estimated at the meeting, at which Charles Clifton presided and which was attended by 103 manufacturers, that contracts for government work to an amount exceeding \$800,000,000 have been taken by the automobile industry, resulting in a continued curtailment of passenger car production as the work of conversion is brought about. This includes the making of airplane motors, tanks, tractors, trucks, mine anchors, trailers, guns, rifles, revolvers, recoil mechanisms, steel helmets, ambulances, field gauges and scores of other articles for the war program.

Supplying Government Needs.

Probably no other industry in the country of a similar size or importance has sacrificed so much of its product to supply the government needs in a big way as the automobile industry, which is the third largest manufacturing industry of the country.

At a meeting of the truck manufacturers in the afternoon, the makers listened to reports of the gasoline and tire situation which indicated ample future normal supplies for all useful motor car driving. The makers are carrying on a campaign for conservation of all kinds of materials used in automobile factories, including repair parts, with the elimination of equipment of a character not absolutely essential.

The Export Committee meeting reported to the Chamber its plans for exports of automobiles after victory is won. Exports of the automobile industry have exceeded \$100,000,000 a year and countries throughout the world look to America to supply their needs for passenger and freight carrying vehicles. There were exports last year to 82 different countries, including 15 cars and one truck to Iceland.

At the truck meeting in the afternoon, with practically every important truck maker in the country in attendance, there was a general discussion of the Government needs in trucks and the best measures for their prompt care. In addition, there is an increasing demand for trucks for essential industries involved in war work directly and indirectly, which is placing a burden on the truck builders.

Better Roads Needed.

Victor L. Brown, of the Commercial Vehicle Committee, presided at the truck gathering, addresses being made by George H. Pride of the Highways Transport Committee of the Council of National Defense on the work of that Committee and the need for better roads, particularly for military uses.

George M. Graham spoke on "How the Motor Truck Industry Is Affected by Developments in Washington." Other addresses included S. A. Miles on "Rural Motor Express;" H. G. Shirley on "Need for Uniform State Laws Governing the Use of Motor Trucks," and S. M. Williams, President of the Highway Industries Association, on "The Work of That Organization in Highway Matters."

The makers discussed in detail the suggested standardization of solid tires on motor trucks, wherein there will be eliminated a large number of the odd sizes that require the carrying of excessive stocks by dealers, bringing the number of sizes down to a comparatively small number as was done in the pneumatic tire standardiza-

tion plan which resulted in the standardization of seven rims and nine sizes of tires, eliminating more than 200 odd sizes.

By invitation, C. C. Hanch, Chief of the Automotive Products Section of the War Industries Board, attended the meeting to tell the members of the requirements of that Division and the new priority rulings under which passenger car manufacturers are permitted to balance their inventories under a curtailment of 50 per cent from the 1917 production, to be accomplished by January 1, while the truck manufacturers' production to be sold only to essential industries, is limited to one-third of their average production for the 18 months ending July 1, 1918.

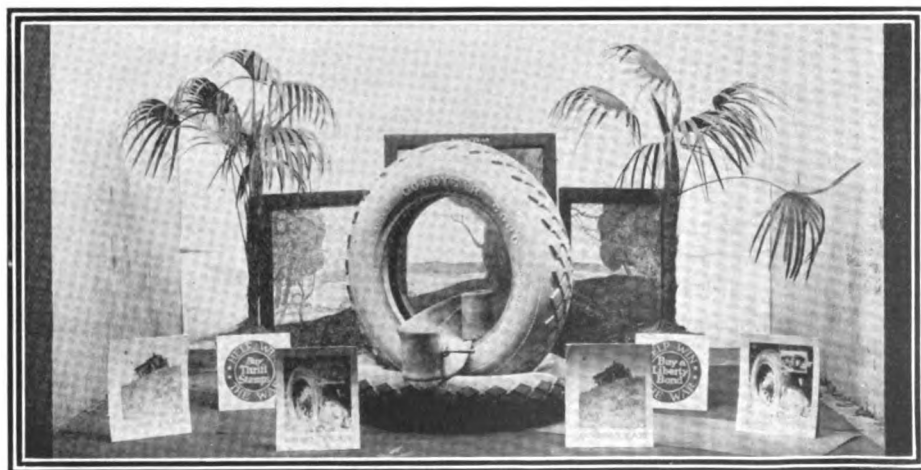
Is the Truck a Utility?

A tabulation of the postal receipts and cost of operating eight of the Postal-Rural Motor Truck Express Routes by the Post Office Department, from January 1, 1918, to May 31, 1918, a period of five months, show:

Gross Postal Receipts..\$152,237.74
Operating Expenses.....27,130.98

Net profit\$125,069.40

An average, per month
per route of about...\$ 3,000.00



Window Display for Goodyear Branches.

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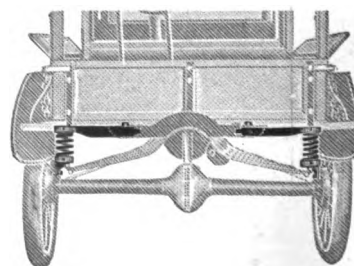
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Better Roads Needed.

Victor L. Brown, of the Commercial Vehicle Committee, presided at the truck gathering, addresses being made by George H. Pride of the Highways Transport Committee of the Council of National Defense on the work of that Committee and the need for better roads, particularly for military uses.

George M. Graham spoke on "How the Motor Truck Industry Is Affected by Developments in Washington." Other addresses included S. A. Miles on "Rural Motor Express;" H. G. Shirley on "Need for Uniform State Laws Governing the Use of Motor Trucks," and S. M. Williams, President of the Highway Industries Association, on "The Work of That Organization in Highway Matters."

The makers discussed in detail the suggested standardization of solid tires on motor trucks, wherein there will be eliminated a large number of the odd sizes that require the carrying of excessive stocks by dealers, bringing the number of sizes down to a comparatively small number as was done in the pneumatic tire standardiza-

tion plan which resulted in the standardization of seven rims and nine sizes of tires, eliminating more than 200 odd sizes.

By invitation, C. C. Hanch, Chief of the Automotive Products Section of the War Industries Board, attended the meeting to tell the members of the requirements of that Division and the new priority rulings under which passenger car manufacturers are permitted to balance their inventories under a curtailment of 50 per cent from the 1917 production, to be accomplished by January 1, while the truck manufacturers' production to be sold only to essential industries, is limited to one-third of their average production for the 18 months ending July 1, 1918.

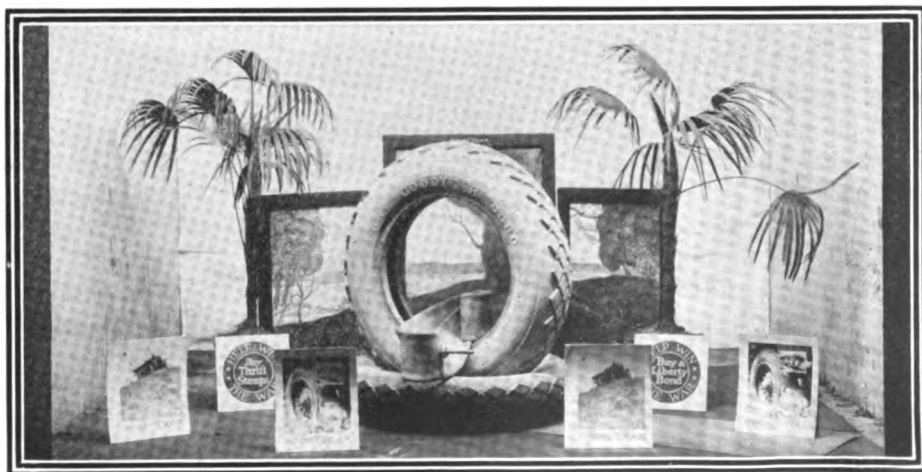
Is the Truck a Utility?

A tabulation of the postal receipts and cost of operating eight of the Postal-Rural Motor Truck Express Routes by the Post Office Department, from January 1, 1918, to May 31, 1918, a period of five months, show:

Gross Postal Receipts..\$152,237.74
Operating Expenses.....27,130.98

Net profit\$125,069.40

An average, per month
per route of about...\$ 3,000.00



Window Display for Goodyear Branches.

MANUFACTURER-DEALER *Helps*

Twitchell Gauge Co.

We offer and furnish printed matter to our customers with their names imprinted thereon.

We send out a Catalogue Suggestion sheet which illustrates and describes the electros we have to offer. These suggestions are sent out to our customers several times a year together with a special letter offering the cuts and suggesting the use of them for advertising purposes.



You can sell a dozen from this Display Card faster than half a dozen packed away on your shelves.

One of the latest sales helps which we have gotten up for our customers is the Twitchell Counter Display Card on which our gauges are now furnished. The Display Card measures 14x14 inches, is lithographed in six colors, is very attractive to the eye, and holds twelve Twitchell gauges in their regular individual boxes. These Display Cards have been found very suitable for decorating windows as well as for show cases and counters. It has been proven that the dealer can sell the twelve gauges on the card quicker and with less labor than when he sold half that quantity drawn from a hidden supply.

E. M. GALID.

Ever-Tight Piston Ring Co.

Upon request we send our salesmen to work with customers' men for a period of not to exceed two weeks at a stretch. We send our sales literature to them voluntarily, with their name imprinted thereon, omitting our name.

We do not ask our dealers to sign an agreement, but do ask them to distribute the advertising matter carefully and to the best advantage.

We furnish veneered display board with samples thereon for window display, display counter cards, newspaper electros, and 1,000 lines of advertising matter in their local newspaper to be taken out within one year. We also offer, in addition to this, to go fifty-fifty with them on any additional newspaper advertising devoted exclusively to our product.

We send them quantities of direct advertising matter in the way of booklets, circulars, etc., and in addition thereto, we circularize every automobile repair shop,

garage and automobile accessory dealer in the United States monthly.

In addition to the foregoing, we advertise in practically all the leading trade journals and other mediums.

RODNEY HALLAM, General Manager.

Tuthill Spring Co.

We do not come into very great personal contact with the dealer as we thoroughly cover the country by means of distributors, for obviously it would be impossible to sell springs without having located at favorable points stocks from which the dealer can draw, for when a car owner breaks his spring the necessity of quick replacement is apparent.

Our jobbers are supplied with complete price-lists, booklets and window service station signs, which they distribute to dealers and garages by their salesmen and through the mails. This literature is sent to them voluntarily, but we usually ask what quantities they need. We also use other common forms of dealer aid such as enclosures, direct circulars, electrotypes, etc.

In addition to the help we have mentioned, we, of course, advertise in practically all trade publications as well as some national publications, and in this advertising the names of our various distributors are usually given. In conclusion, we might add that we have always held a very high opinion of the AMERICAN GARAGE & AUTO DEALER as a means of interesting the class of trade we are most desirous of reaching.

A. A. DAILEY, Advertising Manager.

Stewart-Warner Speedometer Corporation

Dealers in Stewart accessories are given continuous selling aid, in a great variety of forms. In the first place, we are national advertisers. Stewart Products are half sold when the dealer shows them, because the public has for years read the Stewart story.

All sales literature is sent first to our salesmen, and to jobbers and jobbers' salesmen. They take it to the dealers, who send us orders for literature in the quantities they desire. A great deal, of course, is also sent on request.

The salesmen, when sending in the order for advertising literature, is the judge of the amount to be sent, and the use to which advertising will be put. We do not exact any promises. As a general rule, however, we send literature only on the products sold by the dealer. This is true especially of dealers' newspaper electros and window posters.

The kind of sales help furnished consists of the following:

Stewart Trade Mark window transfer sign.

Colored art posters, 15x23 inches, for use on counters or in windows.

MANUFACTURER - DEALER *Helps*

Newspaper electrotypes, either single or double column, furnished free. Space left for dealer's name.

Envelope inserts furnished in quantities, and printed with dealer's name and address.

Instruction booklets shipped with each product. Additional quantities on request. These booklets also advertise other products.

Salesmen's catalog, De Luxe catalog, etc.

Our monthly house organ, the "Stewart Lever," is sent to those engaged in the automobile business, free. Its avowed purpose and policy is the betterment of the trade, and it has a circulation of approximately 100,000 copies.

L. R. MYERS.

Fire-Choke Now Sold In Holders for Car Use

Fire-Choke, the new dry chemical fire annihilator which is being marketed by The Flexlume Sign Co., Buffalo, N. Y., is now being sold with a metal holder which greatly increases the convenience with which it can be used on motor cars. This case simply screws onto the car wherever the owner wishes to place it, and the package of Fire-Choke fits inside.

The holder does not vibrate or rattle with the movement of the car, nor is the package worn by jolting, and at the same time the Fire-Choke is always there in case of need. These holders are made in two sizes to suit the two sizes of packages in which Fire-Choke is put up.

Reports from various parts of the country show that the dealers who are taking on Fire-Choke are finding it a ready seller. Its effectiveness in extinguishing the type of fires that are likely to break out in motor cars is so easily demonstrated that no one can doubt it, and in addition it has the advantages of economy and simplicity. It is sold at considerably less than half the price of any of the better mechanical fire extinguishers, and the Fire-Choke people say that they are ready to prove to anyone interested that a package of Fire-Choke will put out more fire than a mechanical extinguisher of corresponding size.

Claims for the effectiveness of Fire-Choke are well supported by the fact a number of fire departments have adopted it as a part of their regular equipment. For simplicity it is certainly the last word. All that is necessary is to take a handful of the dry chemical and throw it at the base of the blaze. Carbon dioxide gas is instantly formed, smothering the fire.

The Flexlume Sign Co., Buffalo, has recently published a little booklet which tells about Fire-Choke and how it works. It will be sent free upon request.

The Queen City Motor Delivery Co. of Cincinnati, Ohio, have been appointed distributors for the Fruehauf line in Cincinnati and surrounding territory.

A country worth fighting for is a country worth saving for. Buy THRIFT STAMPS.

Delivery of New Elgin Type Scheduled for This Month

Standard Chassis, Under Development for Eighteen Months, Is Mount for Three Different Bodies

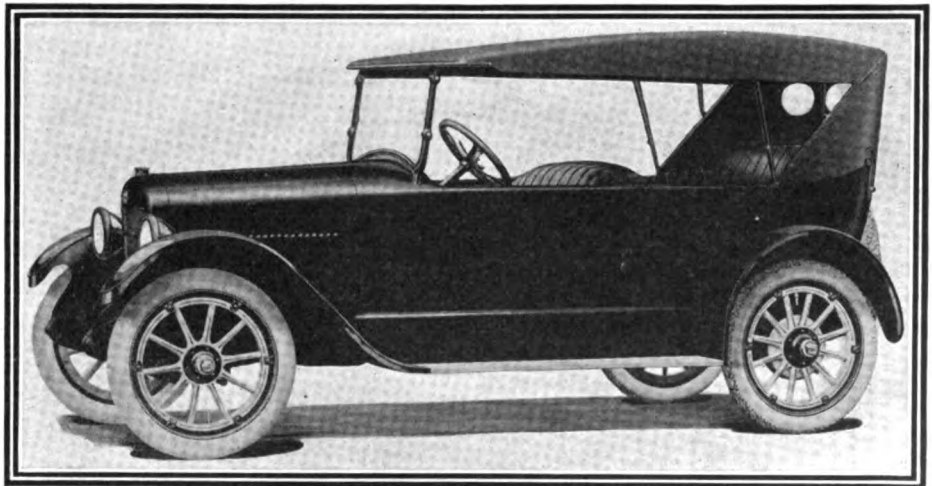
Deliveries of the series '19, Elgin six, are to start this month, although production will be limited under present war-time industrial regulations. The Elgin engineering staff spent 18 months in developing the new model, the task having been started in March, 1917.

A standard chassis will be used for all three different types: touring model, military scout and also the convertible sedan. Some of the features in the series '19 model are as follows:

Cylinder one-eighth inch larger bore. Starting motor raised above center line,

Tie rod is straight instead of bent, and larger in size. This gives more stability and keeps front wheels in line. Oil pressure gauge on instrument board shows whether oil is circulating. Foot rest makes driving easier and permits of an even pressure on foot accelerator. Control levers are moved farther forward and slanted back.

Oil cups instead of grease cups are used on all spring bolts, and can be filled very easily with a squirt can. Rear springs are set closer to frame, which reduces twisting frame side members and tends to elim-



New Elgin 1919 Model.

protecting it from mud and dirt. A flexible and more durable generator coupling, made entirely of steel instead of leather. New oil supply gauge with dial indicator. New oiling system. Pressure feed direct to all main bearings, combined with circulating splash.

Radiator increased in height, with added cooling capacity. The radiator shell is detachable instead of being integral with the core. This permits baking enamel on the shell instead of painting. Front fender aprons are brought out to the front end of springs.

inate squeaks of body and fenders. Also prevents sway of car.

New type door bumper prevents rattle of doors. Beveled plate glass lights instead of isinglass. Fuel tank and tire carrier have been improved. Longer wheelbase—118 inches—gives more riding comfort.

The general lines of the body are improved. The sides are higher, with straight-level lines. The quality and construction of the body is much better, as is also the trimming and finish. More leg room is allowed in the front seat. Hood vents changed from slanting to vertical.

Spread of Welding Advocated for Both Patriotism and Profit

Mending Broken Machines Leaves Steel for War Uses and Saves Time and Money of Customers

BY DAVID BAXTER.

A paper to be read at the State Convention of the Blacksmiths of Kansas, to be held at Hutchinson, Kansas, November, 1918, containing many pertinent reasons why the smithies should take up the art of welding by oxy-acetylene.

Now, as never before in the history of the trade, it is up to us to conserve. Conserve time, material, and man-power. Save time by getting twice as much done; save material by making it last twice as long; save man-power by making it possible for one man to do the work of two. This is not only a patriotic duty, but it means money in our individual pockets.

If we can save time in completing a certain job, we will allow someone else to move a little faster, which in turn will permit someone else to do the same—on up the line toward the mobilization and maintenance of our army and navy. Also, if we can save time on a given job it is obvious we cut the cost to ourselves and thereby enlarge or insure our profits.

If we can repair a worn or broken machine or tool so it will last twice as long we are certainly permitting the material required for a new one to be used for war purposes. If it is possible to do this we can certainly get more work to do because a man naturally prefers to have the machine made "good as new" rather than to purchase a new machine. This is aside from the time and trouble required in ordering a new one. If we are prepared to handle the work, plenty of repairing will come to us during these pressing times.

More will be done in the coming year than ever before. The drafting of men will leave fewer to do the repairing. Factories are overcrowded with work, and railroads are getting farther behind with shipped orders, so that people will not be able to buy new machinery and will be forced to have the old machine "fixed up." You must prepare for this event or lose much.

As for saving man-power by doubling our out-put this is possible, too. Modern tools and equipment are now on the market for this purpose. Perhaps one of the most useful, in fact indispensable, is the oxy-acetylene welding plant. More than half of the required repairing will be impossible without this modern apparatus. With it, in one form or another, almost anything made of metal can be repaired.

Every blacksmith and garage man

should investigate this invention; particularly the blacksmith who is doing, or intends to do, automobile repairing. A welding plant should be in the repair department of every garage, and every blacksmith will find it a paying proposition to do some automotive repairing, which includes work on cars, trucks and tractors.

Repairing Will Increase.

With the government curtailing the production of automobiles, and with factories too busy to make and ship parts for repairs, it is up to the repairing fraternity to prepare for a flood of work. If a person can not buy a new car he is bound to want the old one to run as long as possible. It can be made to do so with expert repairing. Every broken part should and must be repaired. It stands to reason they will be brought to us to repair from necessity if nothing else.

In view of these facts I earnestly urge each and all of you who are not familiar with acetylene welding to investigate the process thoroughly. Those of you who are familiar with it should not be satisfied to rub along but should study and watch the improvements being made all the time, in methods, equipment, and supplies. Learn what the other fellow is doing and try to improve his method.

Many blacksmiths, and many other metal trades mechanics for that matter, are prejudiced against the oxy-acetylene process; many are openly opposed to it; they actually knock a thing they don't know anything about. These men don't realize that they are only making it harder for themselves. It has been proved in other lines that the best thing to do, where machinery has come to replace men, is to fall in line and be one of the first to learn to operate the machine.

It does no good to offer opposition to a thing that is bound to come. So, if you are wise, you will get in while there is yet room on the ground floor. The welding business has been growing by leaps and bounds the last few years, but it is yet in its infancy. But let me tell you it isn't going to be a baby much longer.

With an oxy-acetylene torch we can weld together any of the different kinds of metal, which is practically impossible with the old style blacksmith. The very lightest parts can be readily welded, also castings weighing tons. Many times these cast-

ings can be welded in place by employing a portable plant. The process is just as successful in the deepest mines or on top of the highest buildings.

A fully equipped plant is in reality a complete manufacturing establishment within itself. With it parts may be sheared, punched, shaped and fastened together, that is, such articles as are made of steel and wrought iron. So, not infrequently a new part for an automobile, or various other machines, may be made while the customer waits.

Most failures with the process are due to ignorance of the principles, carelessness, poor equipment, or a combination of the three. Or perhaps the process has been misrepresented or incorrectly understood. And yet the principle is simple indeed.

Welding consists fundamentally of fusing, melting or flowing together two or more pieces of metal, with or without the addition of extra metal, or filler metal, as it is termed. Remember the broken casting you are to weld was originally melted metal poured into the shape of the casting before breaking. Keep this in mind when welding; try to melt the parts together the same as it was when poured. This sounds simple enough, but the beginner is cautioned not to think it too easy. Do not think the welding apparatus will do your work. You must do the thinking and planning.

Any one with average intelligence and some mechanical knowledge can master the art of oxy-acetylene welding, but he must not stop at using his hands; he must also use his mind. Think as you weld.

Welding Easy to Learn.

This much should be said to every prospective beginner: it is hard to do good welding, but very easy to learn to do good welding. That is perhaps the chief factor. A first class outfit coupled with an ability to learn is almost certain to produce successful work. Some welders do faster and better work because they have a better understanding of the art and because they study each separate job, while perhaps they are a deal less skillful with their hands.

We must picture in our minds a perfect weld as being one piece, not two pieces merely stuck together with filler metal. The metals must be melted into one piece.

When purchasing a welding plant there are several important features to consider. Not the least of these is the factor of safety. Buy a machine from a responsible maker. One that has all reasonable safety devices, such as those for preventing flame from flashing back to the acetylene chambers or generator; cooling devices for cooling and purifying the gas; pop valves in case of over-pressure; tested gauges and regulators. A generator too large is better than one too small. It is the same as with an engine: an excess of power is better than not enough. It is a great deal of satisfaction to know you have reserve power for an emergency.

The torch is as important as the generator if not more so. Get a torch that is fully equipped with different sized nozzles or tips.

There is real economy in choosing the correct size tip for a given job. It is waste to use a tip which consumes more gas than is needed to make the weld. On the other hand it makes a poor weld to use a small tip when a large one is needed.

Paraphrase the old axiom thus: two torches are better than one. It is advisable to have at least two complete torches on hand. Not alone for heavy work but for a quick change when working on a particular job, if the first torch gets out of order. On heavy jobs two or more torches may be employed at one time, thus hastening the work.

A combined cutting and welding torch is convenient for the repair man. He can cut out a part and then go ahead and weld in a new one. Any shape or thickness of steel may be readily cut with the addition of a high pressure oxygen line. This high pressure oxygen causes a high rate of oxidization as the welding flame melts the metal. The cut out metal literally burns itself. It is blown away in a shower of sparks, leaving behind a cut which compares very favorably with a saw cut.

Here again the process demonstrates its advantages: it is not necessary to bring the job to the cutter. Instead the cutting device may be taken anywhere. This will be appreciated on break-down jobs on the road. A bent or broken part may be cut out and a new part welded in, without dismantling the machine.

Best Supplies Are Economical.

Another place where beginners fall down is in the purchase and choice of supplies. These supplies include gas, flux, filler rods, asbestos paper and so forth. The successful welder has learned to keep a full supply of all kinds of material on hand. And he buys the best because it is economy in the long run. These supplies should be racked and tabulated so the torch man can choose the proper kind for a particular piece of work. Any responsible manufacturer will furnish supplies of guaranteed composition and quality.

After purchasing an oxy-acetylene outfit do not stick it away in a dark corner

of the shop. Give it a convenient location where it may be taken care of. Remember every contrivance wears out in time, particularly so if corrosion is liable to act upon it. Take care of the generator and its equipment; keep it clean and be sure to follow the directions of the maker.

Everything that makes or consumes gas under pressure is accompanied by a certain amount of hazard. This does not mean the welding plant is a dangerous contraption; it means merely safety first. Here the manufacturer will post you; it is up to you to follow directions.

There is no better recommendation for the oxy-acetylene process than the fact that the United States government has recognized its importance. It is being generally used in the army and navy both for manufacturing and repairing. In fact, schools for welders are being organized in different parts of the country today. There is no getting around the fact that the oxy-acetylene welder is in the front rank of importance and steadily growing more so.

I can not too strongly emphasize the need for garage men and blacksmiths to take up the art of welding. Not only during the present crisis, but for the future. After this war we will have learned to stop throwing away machinery that is only half worn out. Things will be repaired to the limit of their usefulness. Not only that, but we will have learned to appreciate the usefulness of machinery. More machinery will be used for different purposes; which in turns means there will be more repairing to do in the future.

Motors Must Be Repaired.

After the needs of war are supplied the automobile and airplane will come into their own. We are but now on the eve of a motor age. And every motor will bring with it a certain amount of repairing. By motor I mean principally gasoline or oil engines. This above all classes of repair work will call for more welders and better welders.

So, again I say the automotive repair man must install a welding plant and the blacksmith must take up automotive repairing. About half the repairing on automobiles is or may be done with an oxy-acetylene torch. This is also true of other machinery. There is scarcely a part about an automobile which may not be repaired with the torch, when it is broken. Even to straightening bent frames or building up worn parts.

As an example of saving accomplished by the torch: some of the railroads are salvaging worn car wheels of what is termed the flat-wheel type. The flat spot is filled with new metal and the wheel put back in service. A worn crank shaft may be treated the same way. These are but two examples of what the old time blacksmith would find impracticable.

It is high time the prejudiced ones made

an impartial investigation to see what is being done and what may be done with the oxy-acetylene torch and its accessories. It is a patriotic duty and a duty he owes himself to prevent any one of his customers from ordering a new part for his car or a new part of any machine from the factory. Show the customer you can make it "good as new," let Uncle Sam have the metal that would go into the new part, and thus help cut down the burden of the railroads.

Aside from the advantage of having a device by which you can weld castings of all kinds, you will find that you can weld cheaper lots of jobs you used to weld at the forge. What I mean is this: jobs such as rods, belts, hooks, rings, etc., can be welded quicker and easier with the welding torch than with the blacksmith's fire. Even very short rods that may be readily handled at the forge. And then there are heavy jobs which will be found more convenient to weld with the torch.

Welding Saves Manpower.

Especially is this true of the many little one-man shops over the country. One man can handle the heavy shafting because he does not have to pull it out of the fire and place it on the anvil, then there is the trouble of holding it just right. And, oh, that heavy slugging with a twelve-pound sledge. No helper is needed, the welder does it alone. He welds a part then twists the shaft in the V blocks, welds another part, and repeats the process until the job is done. This is to what I referred when I stated that we could arrange to have one man take the place of two. And it is literally true in many cases where the acetylene process is employed.

Every blacksmith knows that metals expand when heated and contract upon cooling. It is this expansion and contraction that causes many beginners to give up in disgust without trying to find out why and where the trouble is. These two trouble makers must be controlled or regulated. Fortunately the thing is simple once it is understood clearly.

Heavy parts heat slower than lighter parts, also they cool slower. Heavy parts expand slower and contract slower than the lighter ones, providing the heat is applied the same. The opposite is true in both cases: the light sections cool faster and contract faster. It is obvious then that the heavy sections cool and contract last and must therefore tend to pull away from the lighter sections, causing a strain or crack.

The remedy is clear though somewhat complicated on complex castings. Here is the fundamental: regulate or control the expansion and contraction by having the heavy and light sections heat alike and cool at the same rate. Of course there are many little things to be taken into consideration on account of the different shape, size and metal of different jobs.

Advertising Contest Winners

First Prize, \$25—

Crown Auto Co., Peoria, Ill.

Second Prize, \$15—

C. H. Wooden, Lamar, Colo.

Third Prize, \$10—

Bode Auto Station, Oak Park, Ill.

Honors in our advertising contest have been awarded according to the list above.

The AMERICAN GARAGE & AUTO DEALER announces a new contest of a similar nature, except that it will be called a "Merchandising Idea Contest." It is open to any of our readers and will close March 1, the winners to be announced in our April number.

The plan is to have our readers tell us the most successful sales or merchandising idea or campaign they have used to increase their profits; whether it was an advertising stunt in newspapers, a direct-by-mail circular effort, selling goods or service by telephone, or personal solicitation—in fact, any plan THAT MADE PROFITS. First prize will be \$25, second prize \$15 and third prize \$10.

The Crown Auto Co. prize-winning advertisement is shown on this page. Some of our readers have seen it, for it was reprinted in the November, 1915, number of Garage Efficiency, which journal has been absorbed by the AMERICAN GARAGE & AUTO DEALER.

Mr. Wooden's prize was captured by a combination of letter writing and circular work illustrated on the next page. The Bode Auto Station takes third prize for its double-page advertisement in Oak Leaves last February, a reproduction being shown at the bottom of the following page.

In submitting the Crown advertisement, R. N. Moutier of the Crown Auto Co., wrote in part as follows:

"We take pleasure in submitting herewith one of our local newspaper advertisements appearing in the Peoria Journal issue of October 24, 1915, to create and develop new business, just at a time when we had expanded to the extent of buying out our largest and strongest competitors and operating it in connection with our old quarters a few doors away.

"The results from this advertisement, followed by letters and personal solicitation, kept our shops and garage overflow-

ing with work during the entire winter of 1915, the first winter in which we did not lay off a single employe, in fact, increasing our force to handle the additional volume of work.

"It was primarily through much of the new business developed from this, our first advertising campaign, that forced us during the following spring and summer to combine the two places into one extensive

establishment, constructing a new fireproof building 120 by 170 feet, two stories, with a floor space of over 40,000 square feet, now considered one of the most elaborate, completely equipped garages in the country, in which we have embodied many new, advanced features conducive to the convenience and expeditious handling of motorists.

There is a Rural Motor Express Line operating daily on a regular schedule between Lake Mills and Mason City, Iowa, a distance of 92 miles for the round trip. Recently a fleet of trucks, comprising 1 ¾-ton, 2 1-ton and 2 1½-ton trucks made the round trip in 9 hours, 40 minutes, at a total cost of \$46.35, which covered gas, oil, tires, repairs, interest, depreciation, drivers, garage insurance and license. The trucks carried 21,000 pounds of produce, and are operated by J. D. Eggleston, of Mason City, Iowa.

"Your" car this winter

WHERE WILL YOU KEEP IT?

A car is sensitive—it must have the right attention to be fit and ready in the Spring.

If an Electric, the Batteries must be kept charged; a Gas car needs just the right temperature; the wheels should be jacked up off the tires.

23,000 SQUARE FEET OF FLOOR SPACE—

We can easily accommodate 200 cars this winter. One of the proprietors in charge of the night force assures you perfect service 24 hours of the day.

LET US OVERHAUL OR REBUILD "YOUR" CAR—

Our Repair Department is equipped to completely overhaul or rebuild your present car. Why not convert it into a little roadster or a classy runabout? Let's talk it over today.

DO YOU NEED NEW BATTERIES?

Let us figure with you on new batteries for your Electric. [We can replace your old batteries with Philadelphia "Diamond Grid," the best vehicle battery on the market, at amazingly low cost.

750 "CROWN SERVICE" Patrons
Make YOUR Name No. 751.

CROWN AUTO CO. 828-830 MAIN
904-906 STREET

"Up to this time very little advertising had been done; it was one of the first pieces of copy gotten out by the advertising man we had added to our organization. We are extensive advertisers and consider the advertising department as vital an adjunct to the successful operation of our business as the repair, electrical or managerial departments."

THE LAMAR MOTOR SALES CO.
THE HOUSE OF QUALITY CARS
 AUTOMOBILES—TIRES—ACCESSORIES

Lamar, Colo., March 16, 1918

Dear Sir:

As a real Automobile Store and Accessory Shop our little home is now known to a great majority of motorists and their friends throughout the Arkansas Valley.

Not yet a year old is our Home, but motorists say it's the most interesting place to shop when in need of Auto Supplies.

Our policy is and always will be that all our merchandise must be of the very Highest Quality and that every customer must be satisfied with every article he buys from a Flash Light to a Five Ton Motor Truck.

This is a day when standard merchandise is in the lead. Every article must be standard. Motorists know when accessories are standard. You will find them here. We have taken pains to see that we are supplied with the things car owners need—A very different thing from stockpiling up on all the accessories that are on the market and lots that are not up to the standard.

If you contemplate purchasing a new car this spring, see our standard line of cars—Hudson, Dodge Brothers, and Buick. Ask any one who owns one. Maybe you own one of these. You know they are standard cars.

Yes when it comes to Motor Trucks, our Republic Trucks are noted throughout the World as the standard truck.

Tires: Every man, woman, and child knows the leading brands of standard tires. You find them all here in our little home, right here on Main street. We have all size tires for all kinds of cars. Any time you want to change a tire come to us whether you purchased the tire here or not. OUR TIRE SERVICE IS FOR YOU, FREE.

We extend to you an invitation to make our House of Quality Cars, your headquarters.

Pay us a visit and let us tell you more about standard merchandise at reasonable prices.

Yours very truly,
 LAMAR MOTOR SALES COMPANY,
 By *Ed. W. Warden*

THE HOUSE OF QUALITY CARS
 DEALERS IN
Dodge Bros.
Buick
and
Hudson
Automobiles

Republic Trucks
3-4 Ton to 5 Tons.

Smith Form-a-Trucks

HOME OF GUARANTEED TIRES AND TUBES
The following well-known makes we carry in stock at all times.
Goodyear
Goodrich
United States
Republic
Michelin
Blackstone
We make a Specialty of Ford Sizes.
We pay the personal post charges on TIRES

Tool Boxes
are sure handy.—We have them with a strong lock on them.—They are made right and priced right
\$2.50

Radiator Covers
Just a few left—must go before spring—get yours now

Flash Lights
handy for a thousand uses—priced from \$2 to \$2.50

Auto Clocks
are handy and look dandy

Spark Plugs
the main thing in the engine.—They must be good.—Call and see our line of standard plugs for every engine

Tire Needs
such as vulcanizing, cement, tire shavers, boots on boots, rubber valve cores, etc.

Tire Chains
Don't skid your car—It's dangerous—use Wood or Rib-O-Rid chains

Tire Pumps
We sell the well known standard one cylinder tire pump known as the Best Speed—guaranteed pump
\$2.50

Jacks
You ought to see the World Chain Jack—a child can operate it.—Then we have such well known makes as the Simpson, Badger, etc.
\$1.50 to \$5.00

Does Your Radiator Leak?
If so, use Cement—it will stop the leak.—It's a can


Lamp Globes
for all kinds of cars

Tire Covers
they save that spare tire
A hundred other auto needs.—Come in, let us tell you about them

THE LAMAR MOTOR SALES CO.
 Right on Main St.
 Always Glad to See You

THIS and THAT
 for the
MOTORIST

A LITTLE FOLDER
 from the
 House of
QUALITY CARS



THE LAMAR MOTOR SALES CO.
 RIGHT ON MAIN STREET
 LAMAR, COLO.

40 OAK LEAVES Saturday, February 23, 1918 41 OAK LEAVES Saturday, February 23, 1918

Phone Bode Auto Station for Satisfaction plus Bode Service



Sales Agent for
Milburn Electric

PHONES
 Oak Park - - 2090
 Austin - - - 1089



Service Station for
 Vesta Batteries
 Goodyear Tires
 Triple Action Springs
 and
 Johnson Shock Absorbers

Bode's Auto Station

Humphrey Avenue
 and Lake Street
 OAK PARK, ILL.

A Garage that meets the needs of the most Exacting

We are fully equipped to take care of all kinds of battery trouble, charging, repairing, rebuilding and replacing old with new

EDITORIAL REMARKS

Help Uncle Sam

The United States is again blessed with bumper crops. From all sections of Uncle Sam's wide domain come reports that the farms have yielded well—so well, in fact, that the truthful news was undoubtedly sad news to Kaiser Bill and his gang.

Another bit of discouraging news probably makes little difference to the Huns, however, for they have had little else during the past two and one-half months. When a man lies in jail, with a broken back, knows that he is financially busted and that his wife has run away with a business competitor, it really doesn't matter much when he hears that his grandfather has died in Australia and left all his money to somebody else.

That is about the position the Kaiser is in today and the news of big crops in America, enough to feed all the allies, is just one more unwelcome report that shows him he is in bad with the Providence that rules the world.

Yes, we have fine crops this year, but stop a minute: The United States government is appealing to the country to do even a little better in 1919. The Secretary of Agriculture is urging the farmers of America to increase their acreage of winter wheat at least 7 per cent. This means that not less than 45,000,000 acres should be sown and if this area could be increased to 47,500,000 acres, so much the better.

Wheat is the big item on the menus of all world tables. Like the cry for ships when the submarine menace was at its height, the call is now: "Wheat, more wheat, and still more wheat."

It is the patriotic duty of every garage man who comes in contact with the farmer to urge him to increase his winter wheat sowing. If he put in 50 acres last year, persuade him to make it 55 for next year's crop. If he had 80, tell him to squeeze in another 10 per cent for 1919.

It is amazing what results can be obtained by united effort. A writer in a magazine recently declared that if all the one hundred and odd million people in the United States, at the same minute, should unite in one concerted shout, it would go far toward winning the war quickly. Of course, he meant that such action would create a tremendous enthusiasm that nothing could stop.

Plenty of wheat to feed our own people and the inhabitants of our ally countries is a vital need. If all of our people should make it their business to increase the winter wheat acreage for 1919, the job would be done. Of course, all of us can't plant the precious grain, but we can all do our bit to persuade the farmers to speed up their production. Public sentiment is the power that gets things done in this country.

Many garage men are in close touch with the farming interests. They come in contact with the tillers of the soil, and are in a position to exert a big influence in favor

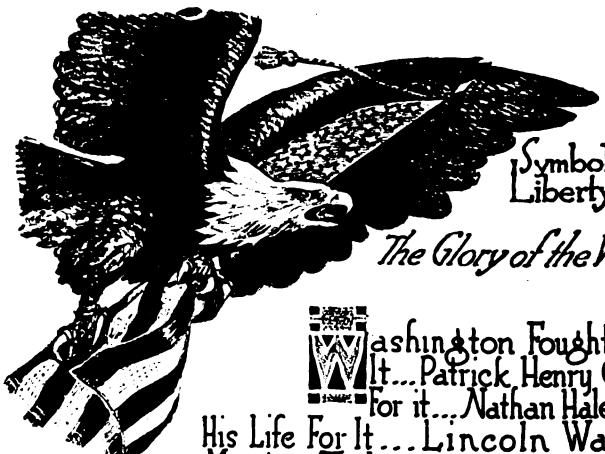
of an increased wheat acreage for 1919. Not only will that help win the war, but it should add to the prosperity of the community. The more wheat the more business, and the more business the greater the opportunity for automotive merchants, automobile, truck and garage tradesmen to increase their profits.

Uncle Sam calls for a greater acreage. Let all do their share to insure a great "Liberty Wheat Harvest" in 1919.

The Show Question

While the car manufacturers are undoubtedly justified in calling off the big national shows at Chicago and New York—because of the fuel needed to heat the exhibition buildings and the transportation the undertakings would require—it is by no means certain that all the local displays ought to be cancelled.

If the local displays were made into automotive shows—with tractors, trucks and trailers exhibited along with such cars as are available—and the affairs put on in the spring when buildings need no heat it might be more truly patriotic to hold them than to do away with them. We would like to hear from our readers on the subject.



Symbol of Liberty

The Glory of the World

Washington Fought For It... Patrick Henry Cried For it... Nathan Hale gave His Life For It... Lincoln Was a Martyr To It... Millions of Our Sons Have Died For It... It Is Your God Given Privilege to Uphold It...

BUY LIBERTY BONDS

The Premier Security of The World.

J.W.F.

Courtesy F. W. Fenn, National Motor Truck Committee, N. Y.

Cutting Costs of Advertising

Most garage owners, automotive merchants and accessory dealers want to advertise. Naturally they want to keep the costs down to the minimum.

Charles Wooden, advertising manager for the Lamar Motor Sales Co., at Lamar, Colorado, is helping in his advertising to conserve paper and getting the results four fold.

When most of us think of circular advertising it is known that they

must always get out 500 circulars at a time. Well that is what you see here. Mr. Wooden arranges his copy on a 10x14 circular, has it set and orders 500 circulars. When finished they are cut so as they will make 2,000 neat circulars and all for the price of one circular.

These circulars he distributes in all the cars in his reach and puts in all the out going mail from the office. He

gets out a new lot every two weeks and always has something new to say and they sure bring results and the cost is one-fourth what it would be if they had been turned out in four separate jobs.

One of the sets produced under Mr. Wooden's plans is shown on this page. In the originals each one of the four circulars is 5 inches wide and 3 inches high.

Dike Says:

WHEN YOU NEED ANYTHING

For Your Automobile

Call at Our Motor Shop

IT'S THE HOME OF MOTOR NEEDS

THE

LAMAR MOTOR SALES CO.

RIGHT ON MAIN STREET

DO YOU NEED A

New Tire

ALL SIZES FOR ALL CARS

6 DIFFERENT BRANDS 6

Every Tire Guaranteed

GOODYEAR UNITED STATES BLACKSTONE
GOODRICH MICHELIN REPUBLIC

The Lamar Motor Sales Company

RIGHT ON MAIN ST.

THE LAMAR MOTOR SALES COMPANY
RIGHT ON MAIN ST.

"The House of Quality Cars"

ALSO ALL THE TIRES AND ACCESSORIES

To Make Motoring a Pleasure

COME TO SEE US

ALWAYS GLAD TO SEE YOU

DIKE SAYS:

Our Pumps Are Dandy

Save Time, Labor and Cussin'

Our Goggles are Built for Motorists.

OUR TIRES—EVERY ONE GUARANTEED
All Sizes for All Cars.

PAY OUR STORE A VISIT

It's The Motorist Home

Everything for Those Who Motor.

THE LAMAR MOTOR SALES COMPANY

RIGHT ON MAIN ST.

The War Needs Good Business to Pay the Bills

We must keep the wheels of industry moving so as to furnish the money to fight and win.

Every day over 100,000,000 of us eat. We also put on some clothes, get on a car, or drive one, and go to work.

We are at war—a big and terrible war. We are fighting for all that life holds dear.

But still we must eat, and dress, and work, and play a little, too.

And it is fortunate for our war interests that nature, or habit, makes us do these simple things every day.

Because it is costing money to fight. It is costing so much that we cannot even imagine what it would look like to see it in one big heap.

These huge sums, the greatest the world has ever spent, must be raised steadily. We need millions of dollars every day.

To be able to spend them we first must make them.

Therefore factory chimneys must be kept smoking.

The cost of living must be earned, and then a little more must be earned—profit out of which to finance our war.

So let us be (1) frugal, (2) industrious, (3) careful, (4) enthusiastic, (5) productive.

Let us not waste. Waste is a sin. It is unpatriotic. It is suicidal now.

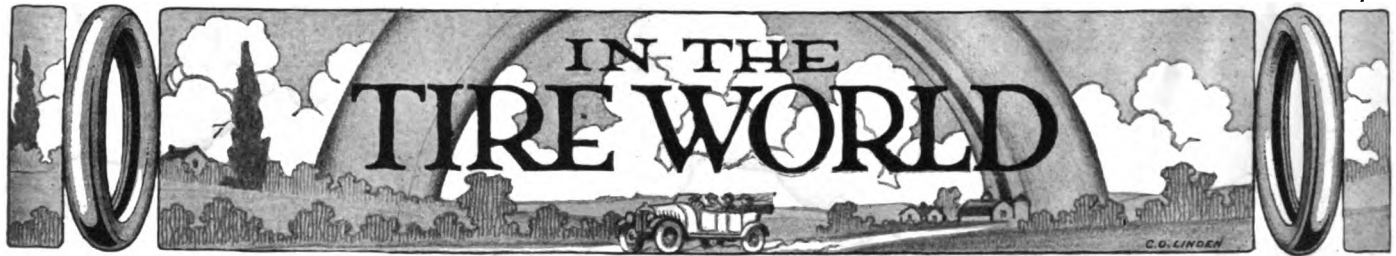
But let us buy and sell enough to keep the wheels of industry moving. They must not stop now.

Our biggest stores, our small shops, our restaurants, hotels, theaters, our big industries and our little ones, must make, and sell, and profit—if gold is to be sent to Washington.

War first—and business second. But let us not forget that paying dollars into Uncle Sam's war chest is a very, very necessary thing.

(Signed) C. E. STEFFEY,

Sales Manager, National Cash Register Co.



Make Profits in Winter Season by Repairing Casings and Tubes

By M. E. FABER

Advertising Manager

C. A. Shaler Company

Apparently the small town garage man has but two alternatives before him this winter. He can follow the example of the well known groundhog and stay out of sight until spring comes around, or he can keep the pot boiling with scarcely diminished energy by turning his attention to new money-making opportunities.

The present spirit of conservation, together with the seriousness of the tire situation, point the way to profitable business in tire repairing. Car owners know that the last mile they get from their tires is the cheapest and will endeavor to get as many "last miles" as they can. They will have their tubes patched to the ultimate limit. They are beginning to "view with alarm" the sand pockets and cuts in their casings. Tires cost more than they used to. The supply may be limited. Everything indicates a bigger demand for tire repairing than there ever has been before.

Most garage owners, even those of the unpretentious cross-roads repair shops, do some tire repairing. Usually, however, the equipment is limited to tube work and is looked upon more as an emergency outfit to be used when necessary than as a real profit maker. Of course, where there is no casing repair equipment, the highly profitable casing repairs are not solicited and this avenue of profit remains closed.

In the average small town there is no exclusive vulcanizing shop except possibly a poorly managed concern that has a high overhead expense and considers its object accomplished when it has cared for the tires that naturally come to it for repair. It hasn't the advantages of a garage in the way of constant touch with automobile owners.

The garage owner is the logical man to get the big profits there are in tire repairing. To those garage men who are already equipped with adequate tire repair plants, we want to emphasize the possibilities there are in making these plants pay profits that they may have missed last winter.

Vulcanizing Not Difficult.

If you happen to have lost the man who used to do the vulcanizing, or if you aren't sure how to get the best work out of your plant, write to the manufacturers for instructions. Vulcanizing isn't half as difficult and is far more interesting than a great deal of the repair work that you have been doing. Careful following of instructions which you can get by mail will enable you to turn out the kind of work that will be creditable to your business.

Assuming that you understand the mechanical procedure involved in mending tires, the next thing is stir up the work to do. Have you ever stopped to think how many slightly damaged tires are hanging in your customers' barns and private garages? Almost every car owner has one or more casings and several tubes lying around waiting for the day when he

will remember to have them repaired. You can get that work *right now*—by asking for it over the phone or with a printed postcard.

Later on, when people begin to lay up their cars for the winter, there will be a lot more repairs that you can be making while the cars are idle. There will be tubes that have been temporarily patched which should be vulcanized, to say nothing of the casings with sand pockets, loose tread, and maybe blowouts in them.

Put it up to your customers, and to the other motorists who ought to be your customers, that now is the time to have these repairs made—when the absence of the tires for a few days will not cause them any inconvenience.

Those who are unfamiliar with the equipment and methods used in tire repairing should take the earliest opportunity to learn what they can about them.

Equipment Cost Low.

Tire repair equipment capable of doing every practicable kind of work can be obtained at about the cost of a couple of small tires. There is no special skill or magic required to operate it. Anyone who has even ordinary mechanical ability can do the work—**AND IT IS WORK THAT MUST BE DONE TO HELP WIN THE WAR.**

Just as in any other line of repairing, there are certain classes of tire repairs, which from the standpoint of good business had best be let alone. The average garage owner cannot afford to undertake the retreading and rebuilding of tires because nine times out of ten a customer will not bring in

a tire for retreading until the fabric is so rotten that even if the new tread can be made to stick, the tire will not last long enough to give the user his money's worth.

You will install a vulcanizer only for the good it will do your business and the profit it will make for you. Therefore be careful in choosing your equipment not to invest in a plant with unnecessary capacity for repairs that in the end will be unprofitable and which your help cannot make. There are plenty of outfits on the market which will do ninety-five per cent of the work that you ever will be called upon to do. The other five per cent of work had better be refused as the cost of the equipment to handle it will be far out of proportion to any profit it will bring.

It has been demonstrated that tire repairing can be made to pay substantial dividends during the winter season. Particularly is this true in rural communities where the usual classes of repairing are practically at a standstill and it is of especial interest at this time when the demand for the conservation is so imperative that it needs little stimulation.

Tire Service Executive Likes Women Motorists

The advent of the woman motorist gives cause for rejoicing, according to Manager W. C. Bannister of the Great Lakes Tire Service, at Chicago. "When a man comes in with a damaged tire, he will often stay and tell the repair man how he thinks it should be mended. Most women come in,

order the repairing, and leave the rest to the repair man.

"In spite of the fact that some men are so willing to direct the work of repairing, most of them have never learned to care for tires so as to prevent injuries. Carelessness about inflation is the direct cause for 75 per cent of all tire troubles. If there is not sufficient air in the tube to keep it up under a load, it bulges out at the side. This strain on the side walls causes the fabric to check and often tear.

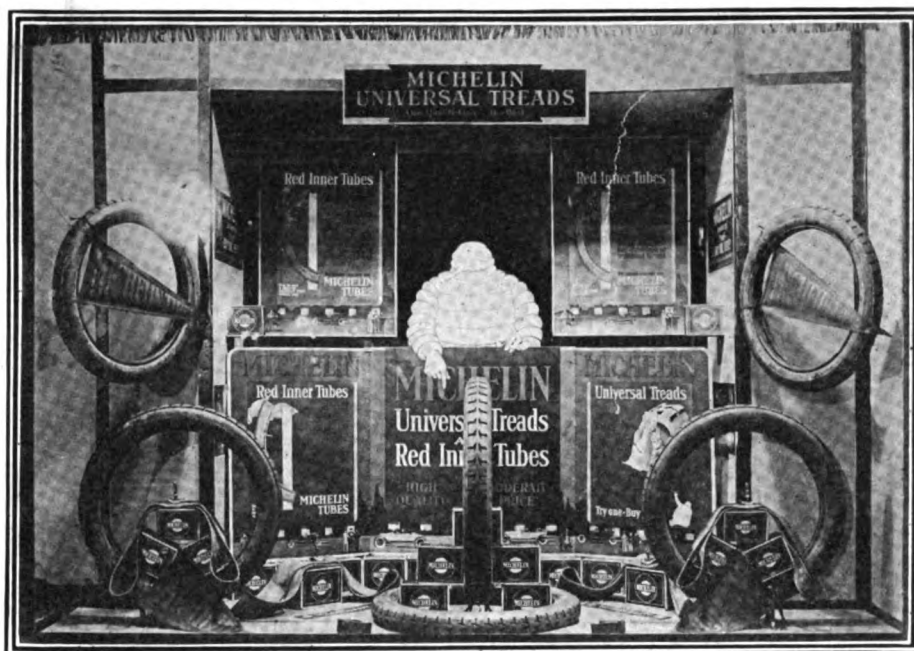
Eventually it gives away.

"A tire insufficiently inflated is also more subject to punctures than a tire with the proper amount of air. More surface comes into contact with the ground, and a soft tire will be pierced by a sharp object, which a well-inflated tire would have

deflected.

"Fifteen to twenty pounds to a cross-section inch of tire is the proper pressure; to be measured, not as a good many men measure, by kicking the tire, or as women may be tempted to do, by feeling it; but by the use of the air gauge.

"'Watch your tread' is another good rule which most motorists do not observe. Making quick and sharp turns, starting or stopping suddenly, running in ruts, on car tracks, or against curbs are all certain methods of rubbing off the tread, and shortening the life of a tire. Small cuts, the starting point for tire troubles, are often caused by unavoidable accidents. If these ills were detected and attended to immediately, there would not be so many tires coming to a premature old age."



Michelin Display Easily Arranged.



Only One Tire but Exhibition Compels Attention.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

How to Make the Shop Pay

Triplicate Requisition System Devised to Keep Track of All Supplies and Tools Used on Repair Jobs

By E. B. HINRICHSEN

The close attention to detail that was given in the small shop was also followed in the large one. No article was considered of such small value that it could be passed over. The main shop stock room was on the second floor with the shop itself, and there was a man always in charge of it. This man also acted as time keeper and requisition clerk. All tools for the main shop were provided by the company and each mechanic drew his upon going to work and turned them in when leaving for the day.

All tools had to be accounted for. If one were broken, the parts had to be turned in just the same. If any were lost, the mechanic was supposed to report the loss immediately. In this way it was possible to keep a check on careless workmen. Too great a loss or breakage would be sure to attract attention.

A runner was kept on the floor to bring the mechanics such parts and supplies as they required, thus doing away with the loss of time occasioned by mechanics going after their own supplies. If a mechanic wanted a certain part, he would call the runner and tell him what it was. The runner would immediately write the requisition, which was approved by the mechanic's foreman.

These requisitions on the parts departments were in triplicate. The original was retained by the parts department, the second copy went to the billing clerk on the first floor and the third went to the timekeeper, who filed it with the time slips in the job envelope in which it belonged. The parts department used their copy to bill the shop from, while the other two copies acted as checks against each other to take care of errors or the possible loss of one copy.

Supplies that were drawn from the stock room were drawn on a similar requisition slip, but made of different colored paper, and were made out in duplicate. As soon as the stock room man filled one of these requisitions he would enter it on his inventory cards and send the duplicate copy to the billing clerk. The other copy went into his job envelope. Time slips were in duplicate and followed the same route.

Thus it will be seen that a job was actually carried in two places at once. This of course only applied to such work as was extensive enough to be sent to the second floor. The minor work that was done on the ground floor was taken care

of by the billing clerk. At first they tried to carry all work at one point, but found that in spite of all they could do, copies of requisitions would get lost or filed in the wrong job envelopes. It was decided that the additional work of carrying the duplicate job was necessary.

All mechanics were paid by the hour. They punched the time clock on going to work and upon leaving. The timekeeper each morning checked all of the time slips of the day before against the clock cards of the day before and saw to it that all time punched on the clock was accounted for on the time slips. After the billing clerk had checked a completed job, only one copy of each requisition and time slip was kept in the envelope. In this envelope also went the cost sheet, together with the selling sheet or office copy of the invoice. A glance at these two sheets was sufficient to tell just what the cost of each job was and the profit on it. This was of the greatest use when it was necessary to make an adjustment for any reason. No one but Bill could change a charge and he was very careful when he felt that it was only justice to reduce a bill, to stay inside his cost.

The first month that the central station was opened they had to estimate their overhead. This they did by adding all non-productive salaries, rent, insurance and all other fixed charges. The balance of expense, such as heat, light, etc., was estimated. After the first month, the expense of the month before was taken as a basis for overhead. Thus, while they were always a month behind and the expense was not always the same, it averaged up pretty well. The charges were based on cost plus overhead and a reasonable profit. It was found that even counting depreciation, which was heavy in certain departments, that the charges could be made much less than they had been before the station was opened.

Of course all this took time and many mistakes were made, but Mr. Brown was an expert on business organization and had learned a good deal about the details of the business during the time spent in the Wilton shop and Bill was thoroughly conversant with shop practice and fairly familiar with conducting parts departments and the errors were not serious.

Bill's principal failing was a tendency to overcharge the customer whenever he thought he could get away with it. He had a block of stock in the concern and wanted to see it pay dividends. Besides

that, he had been trained in the old school and it was hard to get him to readjust himself all at once. If an estimate were given on a job and when the work was finished it was found it was very much too high, it would nearly break his heart to have to tell the customer and reduce his bill. Mr. Brown kept drilling it into him, however, that this was good policy and he finally came to see it.

He did a good deal of experimenting in the big shop before he got a system of work that suited him and was the most efficient. He paid more personal attention to this part of the business than any other and it was always his pet. During the years he was there he probably built up the finest force of automobile mechanics to be found in the world. He would pay anything in reason for the right kind of a man and had an almost uncanny knack of knowing what work a man was best fitted to do.

The general shop system was about as follows: There was a general foreman in charge who did no productive labor, but controlled the whole shop; including the stockroom, timekeeper, etc. Under him he had a number of sub or working foremen. These men each had charge of from two to six men. These groups were assigned to work for which they were best fitted. There was the engine group, who did all motor work; the electric group, who did all the lighting, starting and ignition work; the transmission group, the clutch group, the front axle and steering gear group, the rear axle group, and the body and top men, and besides these the vulcanizers, painters, blacksmiths and machinists.

It was a pleasure to see a car go through a general overhauling and painting job. Instead of the old system of one man and a helper going over the entire car, there would be two or three groups at it at once and no detail was overlooked. Even the tire and top men had their look-in and did what was necessary. A car could be put through in three days (working time), exclusive of painting. The old idea of waiting for winter for an overhauling gave way to the idea of having it done when needed, as a three days' tie-up was not a great inconvenience. Most of the owners were used to being tied up for that length of time by any little breakdown.

Subscribers who mention AMERICAN GARAGE & AUTO DEALER in writing advertisers are guaranteed good treatment. No doubtful advertising is accepted.

In the Truck and Trailer Field

Miami Trailers Being Used in All Sorts of Business

Troy Concern Has Many Stock Types and Designs Special Vehicles When Needed

W. F. Jolley, secretary and treasurer of the Miami Trailer Co., Troy, Ohio, advises that business with them was never so good as it is at the present time. Miami dealers in various parts of the United States are performing creditably.

Miami trailers are now being used in practically every line of business that has a transportation problem.

The popularity and success of the Miami line is due largely to the liberality of the sales policy. Wherever it is found that one of the standard models, of which there are many for various use, is not appropriate, the Miami Trailer Co. has had its engineers perfect a suitable type. Hence, Miami trailers are being shipped into every state. There is a type for farm, express, creamery, hotel, lumber, construction, telephone, municipal and fire department use.

The factory facilities have been more than doubled this year, to take care of the ever increasing volume of business. Deal-



Heavy Bales of Cotton Hauled by Combining Passenger Car and Trailer.

ers are taking to the Miami line because it meets "war time" problems — saves labor and time besides money — an all around useful investment.

Dealers who have an eye to the future will seize this opportunity to write to the Miami Trailer Co., Troy, O., requesting dealer particulars and mentioning the AMERICAN GARAGE AND AUTO DEALER.

The Miami Trailer Co. announces that recent distribution connections covering south and middle southwestern territory which they have made, are as follows:

H. G. Savage Auto Co., Dallas, Tex. (For Texas and Oklahoma).

S. M. Watson & Co., Cordele, Ga. (For Tennessee, Mississippi, Georgia, Alabama, and Florida).

Dawling Auto Co., Charlotte, N. C. (For North and South Carolina).

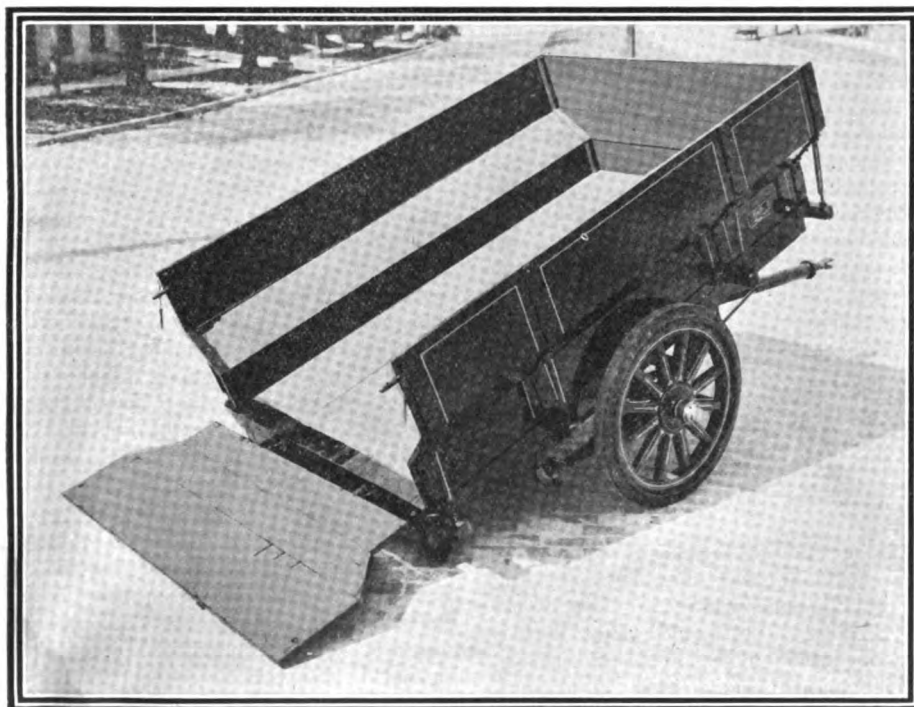
Troy Trailer Sales Co., Denver, Colo. (For Colorado).

Greer Motoring College Trains Red Cross Force

Officials of the Greer College of Motoring, 1519 So. Wabash Ave., Chicago, announce that their institution has been appointed official school for the Red Cross Motor Corps. The enrollment of women students has increased till it aggregates 25% of the total attendance. These young women are taking courses in mechanical work as well as driving, so they will be able to take full care of the cars they drive.

Another feature of the Greer College is the special course in care and upkeep for car owners. Among those enrolled in this course are a number of prominent business men who are or soon will be obliged to take care of their own cars, owing to the scarcity of chauffeurs. This movement has the endorsement of the Chicago Automobile Trade Association, whose officers are advising car owners to learn the mechanical side of their machines in order that chauffeurs may be dispensed with.

The Greer College of Motoring has long been prominent among institutions of its kind. It is fully equipped to give practical as well as class room instruction in every branch of the automobile business.



Miami Trailer Designed for City of San Antonio, Texas, One of Eighteen Supplied.

Welding, Cutting and Brazing

Hints on Sheet Metal Welding

BY DAVID BAXTER.

The welding of sheet metal by the oxy-acetylene method is in many ways a separate branch of the welding business. It has the same fundamental principles as has the welding of castings or forged parts. But the application of these principles is not as complex, nor does it require the exacting care to produce good welds.

The term sheet welding is perhaps a trifle misleading. The jobs referred to in this article are such as are made of the same, or nearly the same, material as that used in steam boilers, tanks, vats, etc., which is commonly thought of as sheet metal. This is in different localities called sheet iron, black iron, wrought iron or mild steel; its chemical composition and structure is so nearly alike in different jobs that the welding of it may be classed under one head—sheet metal.

Such articles as flues, pipes, tanks, automobile bodies, oil pans, and other minor parts, are made of the same kind of metal as the average welder recognizes as wrought or sheet iron. In welding such classes of work, however, he should be on the lookout for articles which are made of special steel and which look on the surface very much like the same metal.

Even in that event the welding will be practically the same with the exception that he will use different or special filler rods and fluxes. This we can take up at some future time holding now to such work as is commonly made of wrought iron or mild steel.

To attempt to classify strictly the different jobs made of sheet metal would require considerable more than the allotted space, as it would probably run into technical and engineering problems quite beyond the time and inclinations of the average welder. Under such conditions it seems better to classify the jobs in some simple way understandable to all. Metal thickness would seem to fill the bill along this line.

Suppose we consider the work classed thus: sheets $1/16$ th of an inch or less thick in one class; sheets $1/16$ th to $3/16$ ths in another; $3/16$ th to $5/8$ ths in the next, and sheets over $5/8$ ths inches thick in the last. All things being equal we should choose a torch, tip, and filler according to this metal thickness. For the heaviest metal a large torch and tip; for the lightest choose a small tip; an intermediate tip for the other classes.

The size of the filler rod should be

chosen according to the size of the tip and to the metal thickness. The manufacturers of welding supplies are always glad to furnish printed tables for selecting the proper size tip and filler.

Preparing the Job.

Sheet metal requires a certain amount of preparation before starting to weld, the same as do castings or bulky work. First see that the line of the weld is clean: scrape off all rust, dirt, or grease as it may result in a poor weld by causing slag or spongy spots to form in the weld. This



David Baxter.

seems so small an item that many welders do not deem it worth while—then they wonder why the weld is not perfect. By all means clean the line an inch or so back from the edge.

The next step in preparing to weld is to decide whether the weld needs grooving or whether it is to be a butt-weld or a lap-weld. This again depends upon the metal thickness.

Thin Sheets.

Sheets less than $1/16$ th of an inch thick are usually butt-welded. That is they are not grooved or chamfered. They are merely placed edge to edge after making due allowance for expansion and contraction.

Another joint is formed by lapping one edge over the other—the lap-weld. But this is only done where the shape of the job permits. The flanged joint also is only applicable in certain cases, such as, when manufacturing articles out of sheet metal or where both parts of the repair job are free.

For sheets less than $1/16$ th it is not

practicable and is unnecessary to groove or chamfer the edges of the joint. This puts us back to the butt-weld as the best choice of methods for this gauge of sheet. The flanged joint is good practice on loose sheets, however, or on other work where the flanging can be handily accomplished. This flanging consists of bending up the edge of one or both sheets to form a right angle. When both sheets are flanged the upbend need not be so great. If only one sheet is flanged the upbend should stand the thickness of the sheet above the top side. That is, if the sheet is $1/16$ th of an inch thick, bend up $1/16$ th of an inch of the sheet. More than this will do no harm except that it leaves surplus metal along the welded joint; which, in some cases, however, is desirable.

The purpose of the flange is to furnish filler metal. Where the butt-weld is employed it is necessary to use a filler rod, or more properly speaking, a filler wire, as the filler should not be over $1/8$ th of an inch in diameter, for thin sheets.

Some welders prefer a lap-weld wherever possible, but it takes more skillful manipulation of the torch because there is danger of burning the joint without realizing it. With this method the upper sheet furnishes the filler metal. The upper lap is melted into the lower one. In effect they are melted into one. In some events the lap-weld may be essential but is not recommended as a general practice. It is of no avail to lap the sheets more than twice the equal of their thickness.

Sheets of Medium Weight.

Sheets $1/16$ th to $3/16$ ths of an inch thick may be treated in the manner mentioned for thin sheets in regard to butt-flange, or lap-welding. When they are over $1/8$ th thick it is better, however, to employ the chamfer method.

If the flange joint is desired the flange should be equal to the thickness of the metal. Where the chamfer or grooved joint is selected the groove or chamfer should be cut to the bottom of the sheets. The V should form an angle of about 90 degrees. In other words, it should be as wide at the top as twice the thickness of the sheet. That is, if the sheet is $3/16$ ths of an inch thick, the groove for both sheets should be $6/16$ ths wide at the top.

The filler for sheet metal ought to be in most cases the same material as the sheets; a piece clipped from one of the sheets will give fine results. However, bronze is sometimes used, although rather expensive.

Heavy Sheets.

The groove method is undoubtedly the best for sheets over $3/16$ ths. The same

measurements hold good in relation to estimating the amount of chamfering. Up to a certain point the same way of estimating the size of the filler rod holds for thick as well as for thin sheets.

On very thick sheets the size is regulated by the capacity of the torch. A certain sized torch will melt only so much new metal. After this point is passed it is poor practice to attempt to use a larger filler rod than can be readily fused with the sides of the groove. The weld will be poorly knit—some section will not be joined at all.

For sheets up to $\frac{5}{8}$ ths thick a fair way to estimate the size of filler rod is to choose according to the thickness by reducing the diameter of the filler. A filler having a diameter equal to half the thickness of the sheet is good up to $\frac{5}{8}$ ths. A filler having over $\frac{5}{8}$ ths diameter would require a large high-power torch such as is scarcely ever present in a repair shop. It sometimes occurs that there are no large filler rods on hand. In which case the operator may twist two or more small ones together.

Preheating Sheets.

No flux is necessary on any of the classes mentioned above. Preheating is usually not employed on sheet metal work, except what is done with the torch as the welding progresses. And yet on heavy work it is economy to keep a special preheating torch working ahead of the welding torch. The purpose of this form of preheating is to enable the welder to work faster; the line of the weld is hot as he reaches it, therefore it takes but little heat to cause it to melt.

Expansion and Contraction.

It is hardly necessary to mention the fact that sheet metal expands when heated and contracts upon cooling just the same as castings or other metal. This characteristic is regulated or controlled in various ways: One way is to spread the crack enough to allow it to meet exactly when cool. Another way is to employ clamps or wedges to force the sheets to lie straight. And another way is to weld in small spots along the joint before welding the entire line.

The shape of some jobs such as oil-barrels, square tanks, flues, fire-boxes, automobile frames, etc., prevents expansion and contraction from working ill to the weld. The metal is held so rigidly in place that expansion and contraction will not be detrimental to a satisfactory weld. This should not be relied upon entirely, as the weld will sometimes crack, even if it can not distort. On repair work it is sometimes essential to cut loose certain parts instead of clamping them fast. On manufactured work the welding may be started in a certain section and worked out in such a way that the contraction equalizes itself toward the unwelded part.

Growth of Repair Work Makes Delays Unavoidable

Worn or Damaged Motor Vehicle Parts Should Be Fixed, When Possible, as Duty to Country

By Ralph H. Ratliff.

Butler Mfg. Co.

Dealing as we do with the operators of repair shops entirely we find they are having difficulty in impressing upon the automobile owners why delays occur and why they can not give immediate service in their repairing. If it is at all possible it would be an advantage to both the repairer and the owner if the owner would become fully acquainted with the true conditions of the iron and steel industry with reference to automobile parts. If you can in any way help the general public on this we feel certain it would prove an advantage to the trade.

Just another thought, it occurs to the writer that never before has the automobile builder had such an opportunity to demonstrate the life of his particular make whether truck or passenger car. Never before has the public been compelled to use their automobiles in such great effort.

Automobile reputations are made or lost during this period. The future of each particular make depends upon its service

to the owner, manufacturers and dealers who provide means to keep the cars sold running insure themselves of business after the war and a reputation of having an automobile which is made to give years of service.

Thousands of dollars worth of old parts have been junked every year which could be easily repaired. Whole cylinder castings have been thrown away, when they could have been reground and new over-size pistons fitted, making a far better engine.

This war will help educate the people to save time, money and material, a lesson which will be installed into the minds of every one and help make the American people stronger in the world.

American prestige and business prestige depends upon keeping in service not only our Army and Navy but also our products. The first consideration of course is the war which we must win and shall win. It is well the American business men should make this idea predominate if he expects to win.

Manipulating the Torch.

The actual welding should be so universally understood that it is scarcely necessary to go into it in detail. For the benefit of the novice, however, it may be well to give a few of the essential features: On light, thin work, regulate the welding flame to a neutral welding flame; the mixture of oxygen and acetylene, half of each. The filler rod kept constantly in the weld and ever in motion—sawing back and forth and twisting around; do not allow the melting filler to drip onto the weld—even a small fraction of an inch. Work anything that doesn't look like clear metal to the surface of the weld, where it may be blown away with the flame pressure.

Keep the torch or flame always in motion, too; around and around in tiny circles or back and forth, or from side to side across the weld. With now and then a dipping motion to blow loose any bit of slag or oxide which may gather in the melting metal. Hold the torch the least bit sidewise so as not to bore the white pencil of flame into the weld, except when blowing out the slag.

At intervals, play the flame up and down the end of the filler rod, especially if it be a heavy one, in order to keep a continuous flow of metal pouring into the weld, which should be kept in melted shape to receive it. Keep a wary eye on the melting metal and on the flame.

When welding wrought iron or steel, a small shower of sparks is continuously flying. These sparks are comparatively small and dull if the flame is right. They increase in size and brightness when the flame changes. They change to a perfect outpour of hissing white sparks if the mixture of gases gets bad. So watch the flame all the time and keep it neutral.

An expert operator can blow the metal about almost at will with the flame as he welds, thus giving the weld a complete and smooth finish without going back over it. On thick welds he will hammer the surface while it is yet bright, thus making a solid, clean-looking weld.

After the weld is entirely finished it is not a good idea to hammer the surface with the idea of trying to make it smooth. However, a sharp chisel may sometimes be used to cut away any sharp projections. These projections should not be present if the weld has been properly executed.

The motor tourist who finds his way into Grand Haven, Mich., should make it a point to have some of the very wonderful white fish for which this town is famous. Fully three million pounds of this delicious fish are the annual catch. Much of it is smoked and in one form or another, this delicacy finds its way into the remotest parts of the country.—Automobile Blue Book.

Tractors and Farm Lighting

Willys-Overland Controls the Moline Tractor Company

Toledo Automobile Concern to Lend Its Maximum Manufacturing Strength to War Work

President John N. Willys announces the acquisition of control by the Willys-Overland Company of the Moline Plow Company, manufacturer of the Moline-Universal tractor, with plants at Moline, Chicago, Rock Island and Freeport, Illinois; Stoughton, Wisconsin; Minneapolis, Minnesota, and Poughkeepsie, New York.

The Moline Company, founded in 1865, is one of the oldest farm implement concerns in the United States. Through the purchase in 1916 and subsequent development of the Universal Tractor company it is today one of the largest tractor producers in the world.

The imperative war-time need of tractors for farm development, the willingness of the government to assist production through the grant of priorities for

utors and 8,000 dealers. As a result of the probable cessation of passenger car production by Willys-Overland early next year the entire selling forces of both companies, as well as their combined manufacturing facilities, will be available for concentration on the development of the tractor as far as may be compatible with the desire of the Food Administration to stimulate food production.

In announcing the closing of negotiations for the purchase of the Moline Company, Mr. Willys said:

"With the present shortage of man power and horses on the farm and the acute war necessity, abroad and at home, of increased food production, the farmer is confronted with the problem of increasing his crops with less help. The

"The Moline organization will remain intact and the company will be operated under the same management as heretofore. F. G. Allen, vice president and general manager, will become president and general manager. The Willys-Overland Co. has simply bought control of the Moline Plow common stock; there is no thought of a merger and no change in the latter's financial status is contemplated."

John F. Dodge Selects the Parrett Tractor

Sometime ago John F. Dodge, of Dodge Brothers, Detroit, asked his chief engineer, Russell Huff, to attend the National Tractor Demonstration at Salina, Kansas, in order that he might have an opportunity of inspecting and comparing all the leading makes of tractors in actual field work. The point was, that Mr. Dodge wanted to obtain a tractor for his farm and desired to go about the purchase in the careful, systematic, thorough manner characteristic of the Dodge organization.

Even before his trip to Salina, Mr. Huff had been attracted to the Parrett because of its clean, compact and thoroughly practical design, which his experience as an automotive engineer led him to believe was a criterion of satisfactory tractor performance. At Salina he had an opportunity to prove the wisdom of this idea by witnessing the Parrett being subjected to the unusually severe test of operating in an officially conducted endurance run of over 103 hours. This, together with the reports available on every side concerning the remarkable performance of Parrett tractors in the hands of farmers during the last six years or more, made a lasting impression upon Mr. Huff.

After Mr. Huff's return from Salina, he further followed out his investigation by visiting the plant of the Parrett Tractor Company at Chicago Heights, Ill. As a result of his findings, an order has just been placed for a Parrett, Model H Tractor, which is to be used on the famous Meadow Brook Farms at Rochester, Mich., owned by Mr. Dodge.

Large manufacturing centers may boast of the progressiveness and development they have brought about in their communities, and yet the Automobile Blue Book assures us in its Points of Interest that Richmond, Indiana, has the first colony factory. This consists of several independent manufacturing plants under one roof, supplied with heat, power and light from a central plant.



Moline-Universal Tractor.

the shipment of steel, and the desire of Mr. Willys to further co-ordinate the immense factory and distributing facilities of the Willys-Overland organization in the winning of the war have brought about the new union of automobile and tractor interests.

The Moline product itself is unique in that the tractor and the farm implement are so connected as to form a complete unit, which one man can operate. At no time in its history has the Moline Company been able to supply the demand for its tractor, although shipments are now running fifty tractors per day.

The Moline Plow Company has 22 branch houses and 30,000 dealers. Willys-Overland Company has over 100 distrib-

tractor with power-drawn farming implements solves the need by enabling one man, woman, boy or cripple to do the work formerly required of two or more men and six to eight horses. With it one man can plow an acre an hour at a fuel cost of only two gallons of gasoline.

"In the purchase of the Moline Plow Company I find not only an opportunity for the Willys-Overland Company to lend its maximum manufacturing strength to legitimate war work, but the best and quickest way for it to attain a lead in a field which offers the greatest possibilities with the return of peace and into which motor companies in this age of power farming, it seems to me, must sooner or later enter.

Install a Curtis Air Compressor



The Curtis Sign


Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.


Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.
1515 Kienlen Ave., St. Louis, Mo.
Branch Office—530-U Hudson Terminal, New York City






PUT NEW LIFE INTO YOUR BUSINESS

by selling

Western Electric Power and Light and Accessories



Your pleasure car business is bound to drop off considerably because of curtailment of output.

Don't let it worry you—selling Western Electric Power and Light and Accessories in the rural communities will more than make up for it.

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Kindly let me know more about the Power and Light sales agency proposition.
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A.G.A.D.-Oct.

Mechanical and Engineering Problems

Bearings Burn Out

Question: I have a car equipped with a Continental motor that I find it impossible to keep bearings in. This car was all right until it once ran out of oil and burned out all the bearings. Since that time connecting rod bearings will last only a short time. It may be one bearing that will go or it may be another. Sometimes two go at once. As long as the car is not driven fast they seem to last, but if I try to make a trip at any speed, I am sure to lose at least one inside of fifty miles.

We have no garage here, but I took the crankshaft to a machine shop and they said it was all right and in perfect shape. I have done all the replacing myself and know that they have not been set too tight. I have paid careful attention to the oiling system and find that when I fill it so full that there is a surplus of oil in the splash pans, it does better, but then the motor smokes and carbons badly. The funny thing about it is that when a bearing burns out there is plenty of oil in the splash pan and the rods have a good dip. It has me puzzled and I would appreciate it very much if you could help me.—J. G. S., Texas.

Answer: If conditions are as you say, I cannot see why the bearings do not stand up. There is one point you are not clear on, however, and that is whether you are getting your bearings from the Continental people. If you are getting them made up locally, it is quite possible that they are not drilled or grooved for oil. There should be two grooves in each half bearing running from one corner of the bearing to the other and crossing each other at the center. In addition, holes should be drilled through the bearings to line up with the holes that are drilled in the connecting rods. I rather think that this lack of drilling and grooving is your trouble. I have seen ungrooved bearings act in just the same way as yours.

* * *

Cause of Knocking

Question: Some time ago my motor developed a heavy knock when the throttle was opened suddenly or when any heavy load was put on it. We thought it was a main bearing at first, but after going over all the bearings found them in good shape. The engine did not run regularly either and seemed to heat a little more than it usually did. I finally sent it to a shop and they fixed it and told me the knock was caused by a lot of carbon on one of the pistons. Now, I might believe them were it not for two things: The first is that most automobile mechanics are liars

The mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and consulting engineer with the Western Electric Co. He is now service manager for the Chicago Republic Truck Co. When shop information is desired, write Mr. Hinrichsen, care this office.

as a matter of principle, and the second is that the knock was there even when the motor was cold, and carbon does not act that way. Can you give me any explanation?—F. B., Ind.

Answer: Maybe you ran up against a truthful mechanic for once. A heavy accumulation of carbon on top of a piston can cause a knock due to raising the compression in that cylinder to a point beyond which it should not go. At any rate, the mechanic fixed it for you and I don't know of any reason why he should not tell you the truth about what the trouble was. What's the matter? Did he actually have the nerve to charge you for doing the work?

* * *

Transmission Case Arms Break

Question: I use a small commercial car of a popular make for light hauling, and it has a habit of breaking off the arms that hold the transmission case in the frame. It has also broken the engine hangers twice. It has what is known as a unit type power plant. The engine, clutch and transmission case are all in one piece. The drive is by a shaft from the rear of the transmission to the differential on the rear axle. I have been to the dealer who sold it to me, but he does not seem to be able to find out what causes it.—T. W. B., Ill.

Answer: It would help a lot if you could give me the make of the car. I do not know why a transmission case on a unit type power plant should be fastened to the frame. Assuming that it is, however, and taking into consideration the fact that it also breaks engine hangers, I am of the opinion that your trouble is caused by too long a drive shaft or by the drive shaft sticking in one of the universal joints. As you drive over bumps the distance between the rear axle and the transmission case is constantly changing. This is taken care of by a sliding joint or joints that form part of the universal joint. If the shaft is too long, the end might strike

the bottom of the slide and have a tendency to force the power plant forward. If the shaft is stuck or rusted in the slide, there would be no give at all. I have seen drive shafts stuck on account of being twisted in these sliding joints. Probably something of this kind is causing your trouble. I am assuming that you keep the bolts that hold the power plant in the frame tight at all times.

* * *

If I Sold AUTOMOBILE OILS

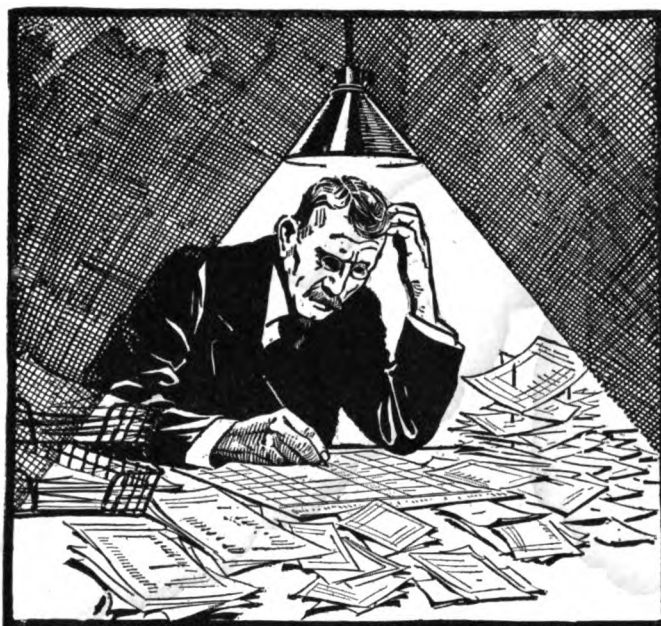
I would occasionally use my window to tell about the relation of lubricating oil to the economical maintenance of an automobile. I would play up the correct lubrication idea instead of merely oil. I would display, for example, a poster bearing the caption: "Protect your car." Another poster might list the results of improper lubrication, as: "Noisy engine or gears," "weakened power," "loose or worn bearing." The cards would be placed on built-up units composed of the different sized containers of the oils handled.

Another display might bring home the pocketbook appeal of correct lubrication. On small window cards I would letter "the benefits of correct lubrication." Each of the cards would have on it one of the benefits of correct lubrication: maximum power, greater second-hand value, lower gasoline consumption, lower oil consumption, silent motor, less frequent repairs, longer life for the engine, minimum carbon. Another card would invite motorists to come in and consult me on the correct lubricants for their cars.

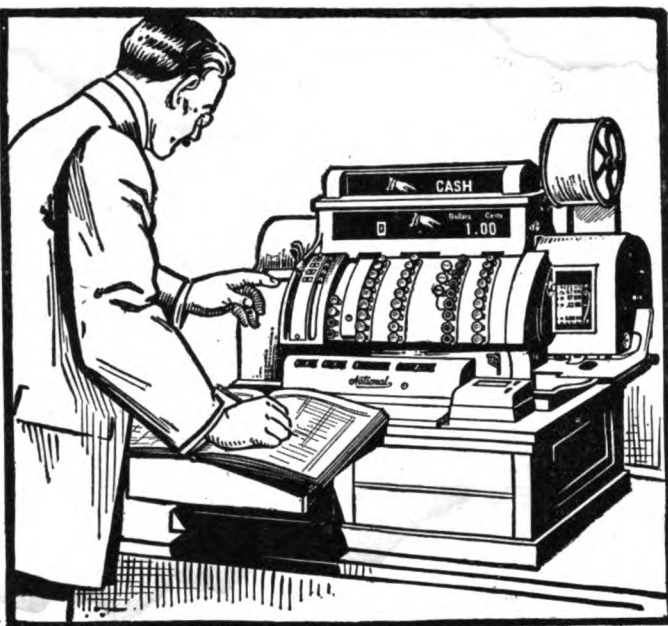
As a means of selling lubricating oil in large size packages I would lay out a window featuring drums of oil. In the center of this window would be a large card reading: "The drum—an ideal container for home garage use." In other parts of the window would be cards giving the selling points of the drum: "No waste," "convenient and clean," "economical," "lower price per gallon," and so on.

Contributed by Paul F. Burger, to the "WHAT I WOULD DO" page of SYSTEM for June.

No trouble to buy, cheap, convenient, a real investment—WAR SAVINGS STAMPS.



The old way



The new way

A man should not do the work a machine will do for him

A merchant, with all his troubles, should never do the work that a machine does better and quicker.

Our newest model National Cash Register makes the records which a merchant needs to control his business. It does fifteen necessary things in three seconds.

Without the register a man cannot do these things in half an hour.

With the register, even a new clerk can do them just by pressing the keys.

Our new electric machines are as much better than old machines as an up-to-date harvester is ahead of a sickle for cutting grain.

The latest model National Cash Register is a great help to merchants and clerks.

It pays for itself out of what it saves.

Merchants need National Cash Registers now more than ever before

FILL OUT THE COUPON AND MAIL TODAY

Dept. 3308, The National Cash Register Company, Dayton, Ohio.

Please give me full particulars about the up-to-date N. C. R. System for my kind of business.

Name _____

Business _____

Address _____

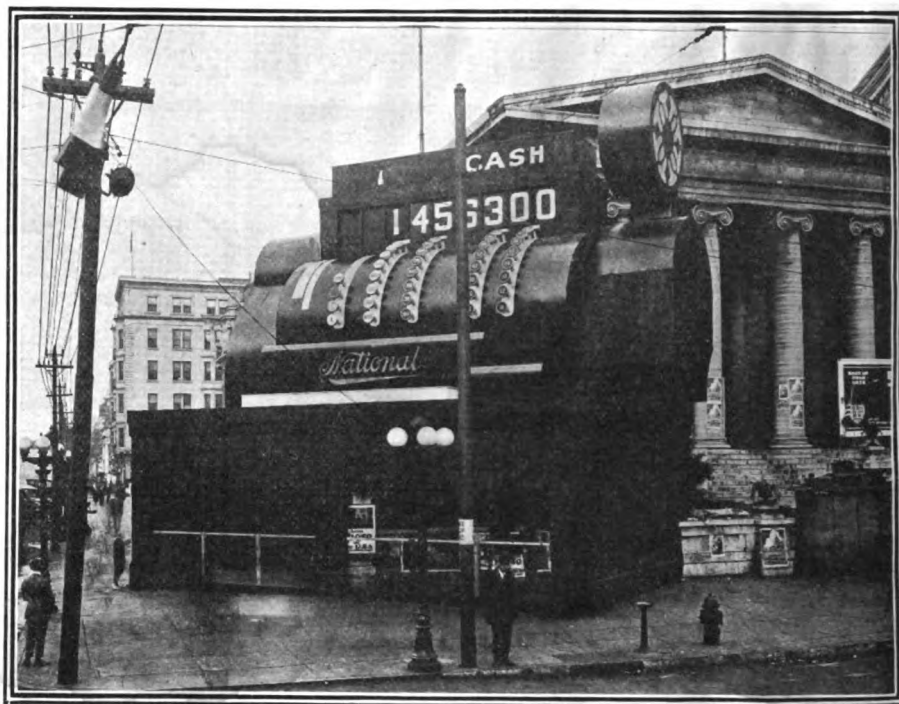
The Council of National Defense urges more efficient motor trucking; the United States Fuel Administration urges the conservation of gasoline, and the War Industries Board urges the employment of every pound of steel for essential purposes.

Therefore, we pledge our trucks to the cause of greater efficiency, so that they shall aid in winning the war.

We promise to carry return loads and full loads whenever possible; to conserve gasoline and oil; to save steel, rubber and man power by more careful operation, and to do our utmost for good roads.

To save freight cars for Uncle Sam through the more efficient and economical operation of our trucks is now our daily endeavor until the end of the war.

—Packard "Save a Freight Car for Uncle Sam" poster.



Register 38 feet High and 36 feet Wide Across Erected in Courthouse Yard at Dayton by National Cash Register Company. It was put up by the National Cash Register folks to stimulate Liberty Loan.

Solid Tire Styles Cut Down

Instructions have been issued by the War Industries Board to manufacturers of solid automobile tires to restrict at once their production of such tires to forty sizes and types. There are now more than 100 such sizes and types. There will be a further elimination of four of these forty sizes and types November 1, and a gradual reduction during the next two years to fourteen sizes and types.

The conservation division of the War Industries Board points out that the conservation of rubber and labor is very nec-

essary. The standardization program permits the continuance of manufacture of the following sizes of tires:

Class A—Hard base pressed on and all removable types of tires: 32x3, 32x3½, 32x4, 36x4, 36x5, 40x5, 36x6, 40x6, 36x7, 36x8, 36x10, 40x10, 40x12, 40x14.

LEGAL NOTICE.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912.

of The American Garage & Auto Dealer, published monthly at Chicago, Ill., for April 1, 1918. State of Illinois, County of Cook, ss.—Before me, a notary public in and for the state and county

aforesaid, personally appeared J. R. Hastie, who, having been duly sworn according to law, deposes and says that he is the president of The American Garage & Auto Dealer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher—American Garage & Auto Dealer, Inc., 116 S. Michigan Ave., Chicago, Ill.

Editor—R. B. Johnston, 116 S. Michigan Ave., Chicago, Ill.

Managing Editor—R. B. Johnston, 116 S. Michigan Ave., Chicago, Ill.

Business Manager—J. C. Kelsey, 116 S. Michigan Ave., Chicago, Ill.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): H. D. Fargo, 116 S. Michigan Ave., Chicago; J. R. Hastie, 116 S. Michigan Ave., Chicago; J. C. Kelsey, 116 S. Michigan Ave., Chicago; S. R. Edwards, 116 S. Michigan Ave., Chicago; I. B. Lipson, Fort Dearborn Bldg., Chicago; F. X. Mudd, Fisher Bldg., Chicago; E. C. Hole, 431 S. Dearborn St.; W. H. Himmel, 1125 Lunt Ave.; S. G. Levy, Fort Dearborn Bldg.; E. T. Clissold, 327 S. La Salle St.; R. S. Clissold, 327 S. La Salle St., Chicago.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state).—None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also, that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

J. R. HASTIE,
President.

Sworn to and subscribed before me this 23d day of September, 1918.

(Seal.)

E. V. CROSS,
(My commission expires Oct. 24, 1920.)



Tires and Accessories Make Fine Showing.

*A demonstration
readily sells this primer!*

JORGENSEN VAPOR PRIMER

Mechanically vaporizes gasoline and effects an economy that appeals strongly to all users of automobiles. Unexcelled construction—highest in efficiency—neatest in appearance—easiest to operate.

Adaptable to all makes of passenger cars, trucks, marine engines and tractors. Made in three styles.

PRICES COMPLETE

Style No. A-4 for Instrument Board.....	\$5.00
Style No. A-3 for Straight Dash.....	\$5.00
Ford Special.....	\$4.50

DEALERS—Write today for literature and trade prices.

The Jorgensen Mfg. Co.
WAUPACA — WIS.



ECONOMY IN OPERATION

A great economy in the operation of the automobile can be effected by the use of the proper piston rings.

The simple, efficient joint of the GILL PISTON RING conserves gasoline and oil, and gives 100% efficiency to the motor.

Install GILL PISTON RINGS and watch the results.

Ask your jobber for GILL PISTON RINGS or write

THE GILL MANUFACTURING COMPANY

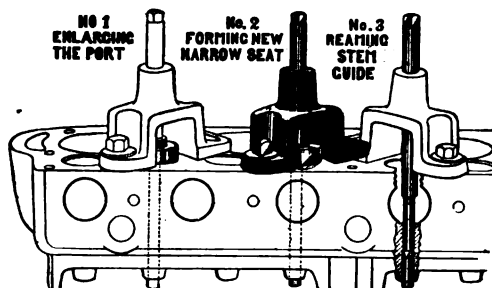
351 W. 59th Street, Chicago, Illinois

Accessories and Garage Equipment

THE STORM VALVE PORT RENEWING OUTFIT.

The Storm valve port renewing outfit embodies many new features of importance that are of considerable variation from the ordinary construction of valve tools. It is designed especially for the Ford motor but can be used on some other motor blocks.

It accomplishes three important things; it enlarges the port, forms a new narrow seat similar to that on a new motor and produces a new stem guide, which when fitted with valves with 1/64 inch oversize stems makes the entire valve system as good as the day it left the factory. In fact, it does everything the name implies; it renews the entire port and valve system.



An upper jig or guide is provided. Emphasis is laid upon this feature as it is the only way accuracy can be obtained. This jig is secured to the engine block by two bolts which fit into the cylinder head bolt holes and it remains in position until all operations have been completed. Then it is swung to the next port by the removal of only one bolt.

On old, worn motors the valve seats have become widened by the wear and the repeated regrindings so that by the old method an enormous amount of grinding would be necessary to reseat them which naturally requires much time and further widens the seat. This results finally in an extremely wide surface upon which deposits of carbon, etc., quickly accumulate.

With the Storm device an enlarging reamer cuts away a portion of the old seat, enabling the reseating reamer, which is next used, to cut a new narrow seat. The enlarged port is in itself a good feature allow-

ing a more free passage of the gases, promotes cooling, permits a somewhat higher speed and greater power.

The reseating is accomplished in practically the same manner as other tools for this purpose excepting that the upper jig insures absolute accuracy, whereas without this support the reamer is allowed to vary or wobble due to the unavoidably uneven pressure exerted by the operator, necessitating a much greater amount of grinding to true same up.

Worn valve stem guides, if necessary, are next remedied by reaming to oversize by the use of the valve stem guide reamer. Often this defect is overlooked, many failing to realize the importance of well fitting stems. If the stem and guide are worn the valve is allowed to wobble and seat unevenly, furthermore the air drawn through the leaky intake valve stems spoils the mixture and is just as serious as a leak in the manifold.

The price of this equipment is \$15.00 and a good price is obtained by the garageman for this class of work so that it quickly pays for itself.

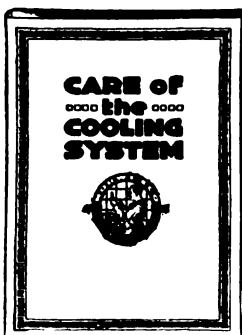
The company issues a handsome illustrated catalog, giving much valuable information together with detailed description of the entire line. Copy will be sent upon request by addressing The Storm Manufacturing Company, Thompson, Iowa.

BOOKLET ON CARE OF THE COOLING SYSTEM.

The average motorist spends little time in trying to maintain the running efficiency of his car. This is especially true in caring for the cooling system, which is more important than the average motorist thinks, yet it is generally neglected. If the cooling system is not kept clean and free from leaks it impedes the efficiency of the engine and increases its cost of operation.

The Northwestern Chemical Company, of Marietta, Ohio, makers of the NORWESCO line of "chemically correct" automotive equipment, have issued a 20-page booklet entitled "Care of the Cooling System."

This booklet is illustrated, and conforms to its title, giving the motorist many practical suggestions and valuable information which will assist him in giving proper care to the cooling system. A copy of this booklet can be secured, postpaid, by writing The Northwestern Chemical Co., Marietta, Ohio.



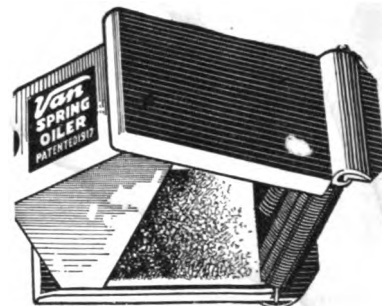
HOBART BROTHERS GET OUT NEW ILLUSTRATED FOLDERS.

Hobart Brothers, Troy, Ohio, have just gotten out two new handsome folders. One is called "Now and After the War," with a sub-title "Battery Charging will pay You BIG PROFITS." It describes the profit chances for automotive merchants who install one of the H-B battery chargers and has a trial order blank on which dealers can fill in their needs. The other folder is styled "H-B Ball Bearing Electric Motors" and describes the line of both alternating and direct current motors made by the Troy

concern. Either or both of the folders will be sent to any motor tradesman upon request.

ATWELL SOUTHERN DISTRIBUTOR FOR VAN SPRING OILER.

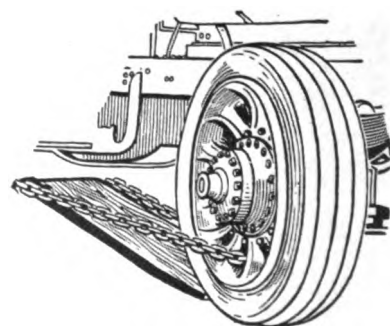
Gordon G. Atwell, Nacogdoches, Texas, has been appointed Southern Factory Distributor for the Van Spring Oiler Co., 223 N. Wabash Ave., Chicago, and is actively taking up their Southern business. He predicts a very heavy sale for the Van Oilers in the South.



The Van Spring Oiler has no bolts, nuts, screws or rivets, to bend, break, lose or loosen, snaps on in a jiffy, and cannot fly off or creep. They afford a saving of one-third in tire expenses, make riding easier, prevent broken springs to a minimum, and retail for fifty cents each in the passenger car sizes, and seventy-five cents each in the truck sizes. Dealers are allowed a liberal discount, and should order through their jobbers, or direct.

MOORE'S MUD HOLE SKID.

Moore's mud hole skid is a device consisting of a board tapering at one end with the other end having a piece of round iron shaped so as to hook a chain on both ends. The chain is brought down one side of the board and put through the center spoke of the wheel, brought back and fastened to the shackle, as shown in the illustration.



When the power is applied to the wheel the chain wraps around the brake drum as it rolls along the board. The device is marketed by Langley & Schultze, 426 S. Third street, Louisville, Ky.

A country worth fighting for is a country worth saving for. Buy THRIFT STAMPS.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....
.....
.....
Name
Address

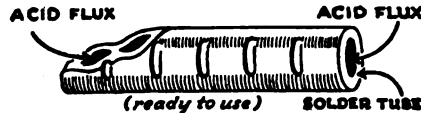


"I'm always out of soldering acid when I've soldering to do"

There's a vast difference between the fellow who is always prepared for his soldering work with a spool of Kester Acid-Core Wire Solder and the fellow who depends on soldering paste or acid.

Kester Acid-Core Wire Solder is cut off the spool as needed. The acid soldering flux is within the solder and ready to use.

KESTER ACID-CORE WIRE SOLDER



You can use only as much Kester Acid-Core Wire Solder as you need—and no more. The only tool you require is a soldering iron—apply the heat and "real it off."

A great time and labor saver, as there is no time lost hunting, preparing or applying the soldering acid. Sold in one pound spools in cartons; on one, five and ten-pound spools in convenient wire form.



"When I have my spool of KESTER ACID CORE WIRE SOLDER I never worry about soldering paste."

Your Jobber Can Fill Your Order

CHICAGO SOLDER COMPANY CHICAGO U.S.A.

P. S. Also manufacturers of Kester Rosin Core Wire Solder



ROMORT SPECIALTIES

supply the missing links to good garage service:

You may have a businessified garage—it may be spick and span inside and outside, BUT—do not overlook the smaller details, because often they are the missing units for the completion of efficient and satisfactory service. And so it is with ROMORT SPECIALTIES, comprised of several styles of automotive air valves, engine cleaners, tire tester attachments, etc.

Romort Automatic Air Valves stop the waste of free air. When valve is pressed on tire, the air is released at once. Style A—list price, \$3.00. Style B—list price, \$1.00.

For removing dirt and grease, Romort Engine Cleaners have no equal. Romort Tire Tester Attachment holds your gauge to our air valve.

Romort Engine Cleaner.....\$3.50. } All jobbers
Tire Tester Attachment.....\$1.50. } carry them.

Manufacturers Sales Dep't
ROMORT MFG. CO. THE ZINKE CO.
Oakfield, Wis. 1323 S. Michigan Av.
Chicago



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Dayton Firm Brings Out Line of Revolving Cases

American Company Devices Have Simple Locking Arrangement Operated by Concealed Lever

Attention is here called to the very complete line of revolving cases manufactured by the American Bolt & Screw Case Co., Dayton, Ohio, for automobile dealers, garages and service stations. Such cases are obviously very necessary for systematically taking care of repair parts, bolts, screws, cotter pins and the one hundred and other detail parts which the busy garageman always wants in a hurry.

It is found that American bolt and screw cases more than pay for themselves by the time, annoyance and materials which they save. The accompanying illustrations give a good example of the cabinets which are offered to the automobile trade.

There are revolving screw cases, revolving bolt cases, besides a diversity of revolving and combination cases which will lighten the burdens of the average garage, machine shop, and service station.

In the foreword of the attractive catalogue showing the different styles of cabinets reproduced in their natural colors, a copy of which will be sent on request, emphasis is placed on the following:

"We are now using iron standards, screwed firmly into an iron hub, in the bot-

tom which makes them perfectly true and solid.

"The tops and bottoms are double, with the grain of the wood crossed, glued and screwed together, and braced with iron rods, which bind the whole firmly together, thus making them strong enough to bear three times the weight that can be put into them, and by which means they revolve perfectly true and easy.

"Our regular stock cases are made of the best seasoned Tennessee poplar, finished in imitation of mahogany. The fronts of drawers are made of the best Norway pine, with the sizes they contain nicely printed on, making it at once a most desirable appendage to hardware stores, repair shops, service stations, garages, etc., and no store that handles bolts and screws is complete without these cases. They prevent mixing of screws and bolts, thus enabling dealers to keep their

stock in good shape, thereby making it a pleasure instead of a task to handle them. The drawers are all provided with stops to prevent their removal from the case. Each drawer holds a package of bolts or screws of the size and number indicated on the front of the drawer.

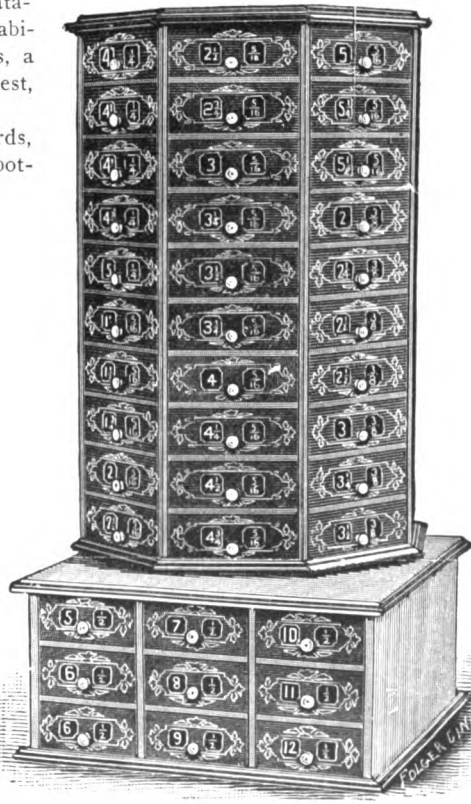
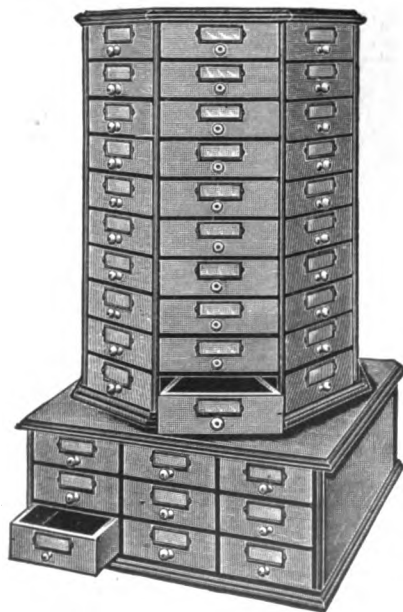
"We have also perfected a locking device for our cases. It is so arranged that all the drawers can be locked and unlocked at one time. There is a lever attached to the case on the under side, and is only accessible to the person behind the



counter. By pressing this lever down it unlocks the drawers and engages in a catch, which holds it in this position until it is desired to lock the drawers again, when by a slight touch the lever is disengaged and the drawers are locked again."

Further information will be gladly furnished on request. All inquiries should be addressed to the American Bolt & Screw Case Co., Dayton, Ohio, mention being made of the AMERICAN GARAGE & AUTO DEALER.

One of the most important trade deals brought through in New York City has just been announced. William C. Poertner, the veteran distributor of National and Scripps-Booth passenger cars, has taken the United States truck for distribution. Mr. Poertner, after visiting the plant of the United States Motor Truck company at Covington, Ky., made up his mind. He found that the United States truck was not an assembled truck but one made by the company.



KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

THE KENNEDY CAR LINER & BAG CO., Shelbyville, Ind.

GUARANTEED SPRINGS CARRIED IN STOCK FOR ALL MAKES OF CARS

For QUICK and SATISFACTORY SERVICE order your springs from

Write for our catalog TO-DAY—DON'T DELAY
Liberal Discounts to Dealers

AUTO SPRING
REPAIR CO.

1331 W. Jackson Blvd.
CHICAGO, ILL.

"Style C"

INNER TUBES - Grab them off!**\$2**

Here is an unusual opportunity to purchase a supply of Inner Tubes at a very attractive price!

EACH WHILE THEY LAST

As the supply is limited to only 2,000 tubes, which vary in size from 28"x3" to 39"x6", and consisting of 6 or 7 well-known brands, we recommend that if you are in the market for same, you wire your order, or write at once.

Providing purchaser takes an equal number of large sizes to an equal number of small sizes, we will sell the larger sizes at \$2.00 each. Guaranteed to be in first-class condition.

Remember that the stock is small—and if you intend to buy—**BUY AT ONCE.**

LEO McDANIEL, Cairo, Illinois**"RELCO"****The Ultimate Automobile Lock**

The lock that the motoring public has been waiting for. Gives absolute protection. Adaptable to any make of car other than Fords. Mechanically a wonder. Fitted with the King-Multiple-Tumbler Lock, capable of countless variations and for which no master key can be made. A half turn at the key locks or unlocks it without moving the lock from its position on the steering shaft. Once locked, car cannot be driven or towed. Powerfully made—no thief with a hammer can break the "RELCO."

Approved by the Underwriters' Laboratories, and affords 15% discount on insurance.

DEALERS: You will find a ready market for the "RELCO" Lock. Your profit is liberal.

We also manufacture the famous MUELLER LOCK for FORDS.

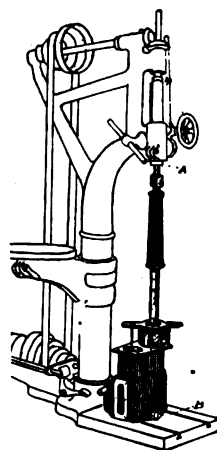
Write today for particulars.

THE RELIANCE COMPANY

411-417 So. Sangamon St.,

CHICAGO, ILL.

Distributors in every state

**STORM**
CYLINDER RE-BORING MACHINES

Are Making Big Profits for Thousands of Repair Shops.

They are Simple, Speedy, Accurate and reliable for hand or power. Adjustable for different sizes and are made in varied capacities to suit your requirements. Also special Machines for Ford and Dodge.

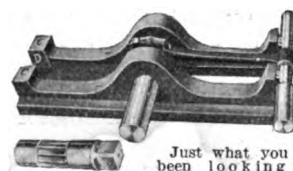
No shop complete without one. In daily use in United States and foreign countries.

The Storm Connecting Rod Bearing Reamer, Jig and Straightening Gauge

The Storm Piston Vise



Holds the Pistons firmly while repairing or replacing bushings, pins, rings and rods. Saves time and prevents damage.



Just what you have been looking for! Makes accurate fitting bearings and insures perfect alignment. With it your cheapest man can do expert bearing work.

We also manufacture the Storm Valve Tool, Special Pistons, Etc.

For Sale by Leading Jobbers Write for Catalog.

STORM MFG CO.

1714 4th Street

THOMPSON, IOWA

You never can tell when the **BUFFUM PATENT BUICK VALVE REMOVER** will come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the **only** device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.

Every Garage and Repair Shop

should have a **BUFFUM BUICK VALVE REMOVER** as part of its regular equipment.

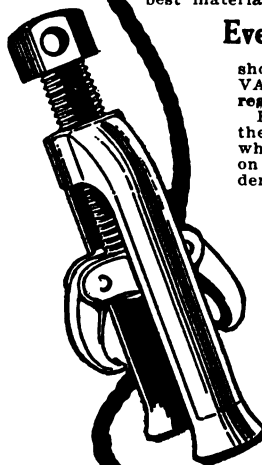
Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00. Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.



WILLARD SUPER HEATER

A great
saving
for the car
owner.
Big Profits
for You

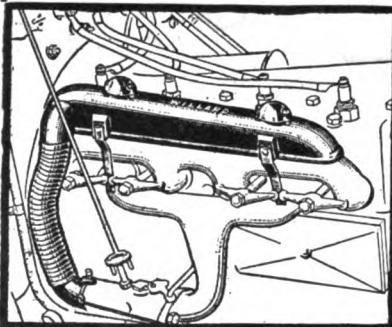
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD

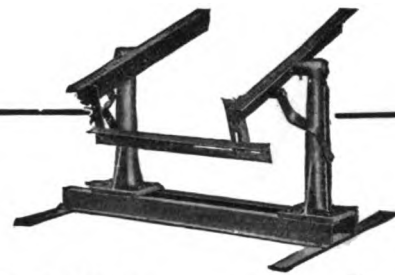


Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hillite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

AMPECO PRODUCTS

Sell readily because their superiority
is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

American
Machine
Products
Co.

Marshall-
town,
Iowa



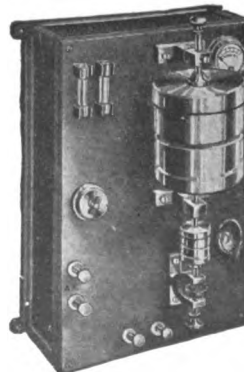
The *Breco* Converter FOR

charging batteries or for any other
purpose where it is necessary to
change A. C. to D. C. is Far Superior.

HIGHLY EFFICIENT,
ECONOMICAL, RUGGED AND
VERY EASY TO OPERATE

The new, modern method tested
by years of everyday service.
Endorsed by highest authorities.

Price, \$24.00 Up—Sizes, 1 Battery Up



Battery charging becomes a
very simple, inexpensive and
mighty profitable matter
with the BRECOCHARGER.

Write for Catalog No. 22

THE
BRECO ELECTRIC CO.

206 HURON STREET
TOLEDO, O., U. S. A.

Sole Licensees

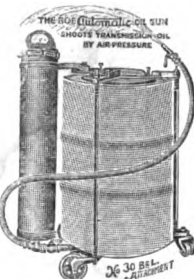
Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



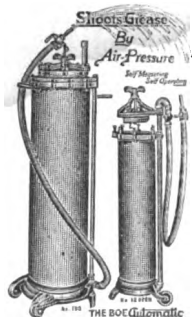
ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA



Its a happy garageman who has a HOLMES WRECKING TRUCK

This advertisement actually expresses the attitude of hundreds of garagemen and repairmen who have a HOLMES WRECKING TRUCK.

Regardless of the wrecked condition of the car, it can be readily "towed in" with a HOLMES.

Staunchly built, frame and wheels of malleable iron castings, Hyatt roller bearings for wheels and tongue of second growth ash.

PRICE, \$50.00

Special Discounts to Garages and Dealers.

ROBERT HOLMES & BROS.
DANVILLE, ILLINOIS

No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

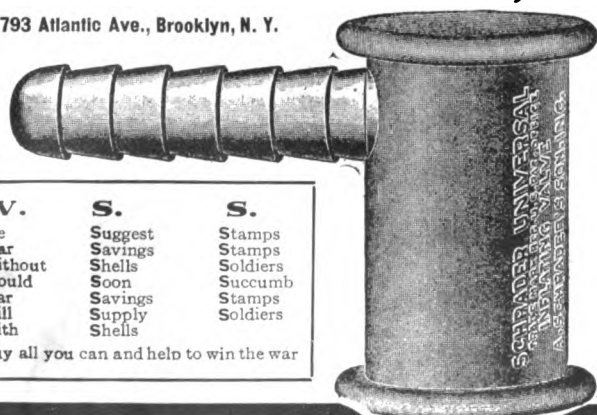
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from 1/4 to 3/4 inch. Price, \$1.50.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.

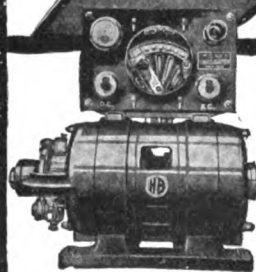


W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

Now and After the War

BATTERY CHARGING Will Pay You BIG PROFITS



Curtailment of motor car production—more old cars in use—more batteries to charge—and battery charging means bigger business and bigger profits—that's the opportunity you have right now. After the war, the demand will be vastly increased and your opportunities will be greater than ever.

HB 500 Watt Battery Charger

Go after this profitable business now and build for after the war with HB equipment. Anyone can operate—No extra help necessary. This 500 Watt Charger will recharge from 1 to 7 batteries at once, with a current cost of only 12c to 15c per battery. Autolst pays 75c to \$1.50. Hundreds of HB owners are clearing \$100 to \$150—Some even more. Why not you?

\$15 Puts This Money-Maker in Your Garage

Balance in 9 monthly payments of \$20 each. Earnings should easily pay and make good profit besides. Write for full particulars or send \$15 with trial order and get your charger at once. Under absolute money-back guarantee, you run no risk. Write or wire today.

HOBART BROTHERS COMPANY
Box G 10, TROY, OHIO

GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company

1002 Washington Boulevard
Chicago, Illinois



Smooth as the flight of the birds



going South for the Winter is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 200,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There are thousands sold every month.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



MONOGRAM OILS & GREASES

You are known by the oil you keep. No apologies are ever necessary when you offer a customer MONOGRAM OIL.

The motor-driving public is becoming more educated daily to the use of proper lubricants and its demands must be satisfied. *Any old oil won't do.*

**Monogram Users are
Quality Choosers.**

**NEW YORK LUBRICATING
OIL CO.**

NEW YORK CITY
and CHICAGO
Branches in Principal Cities



Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

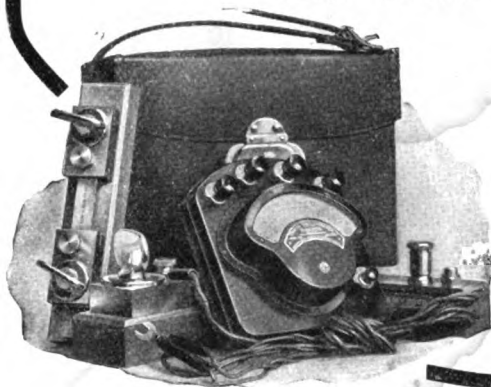
Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for **\$15.00**.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

Do You Get Your Share of This Business?



Weston

Model 280
**GARAGE
TESTING INSTRUMENT**

is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*.

Weston Electrical Instrument Co., 30 Weston Ave., Newark, N. J.
23 Branch Offices in Larger Cities

NOKORODE SOLDERING PASTE gives perfect service because it is perfect in its composition

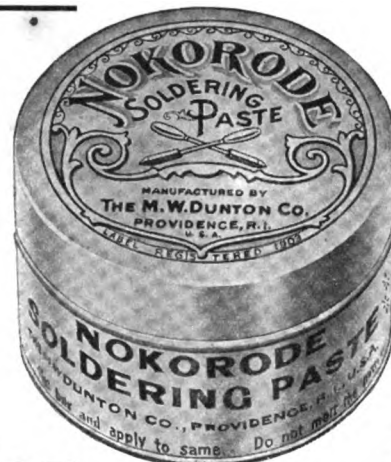
All tests that have been made show that NOKORODE is free from acid, impurities, or any other element that is injurious to metals.

NOKORODE is compounded with so much care that every particle contains every element of the flux. A little goes a long way, making it the most economical for you to use.

NOKORODE is the choice of the United States Government, and most leading car manufacturers.

Are you using it? If not, write today for sample and literature.

The M. W. DUNTON CO., Providence, R. I., U. S. A.



GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.



GASOLINE STORAGE OUTFITS

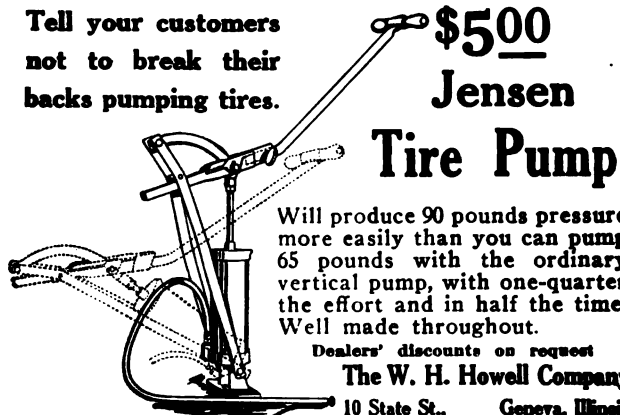
If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.

Tell your customers
not to break their
backs pumping tires.



**\$500
Jensen
Tire Pump**

Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

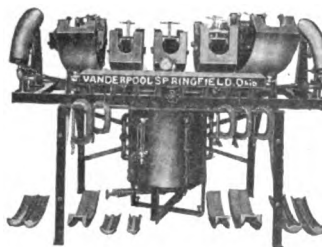
Dealers' discounts on request

The W. H. Howell Company

10 State St., Geneva, Illinois

GRASP THIS CHANCE TO MAKE BIG MONEY

Get into Automobile Tire Repairing Business. All the work you can do. Our outfit has capacity up to \$100 worth of work a day. We supply everything and show you how to start.



VANDERPOOL VULCANIZER

Only vulcanizer made that repairs tires upon correct principle exactly as the big factories. Now used by veteran tire repairing men after discarding all other makes. A tremendous opportunity. Write at once for free Tire Repairing Manual.

In answering, address
DEPT. O-2

The Wm. Vanderpool Co., Springfield, O.

REG. U.S. PAT. OFFICE



PISTON RINGS

Put Energy In Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings. K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.

KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.

The Geyser

VISIBLE GASOLINE DISPENSER

is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage. Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.

Elgin Six

"Car of the Hour"

Has gained predominance in its price class by unmatched performance. All that a motor car should be, at a price that is surprisingly low.

117-inch Wheelbase
Valve-in-head Motor

Elgin Motor Car Corp., Argo, Illinois

"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar Steel and are Heat Treated. For

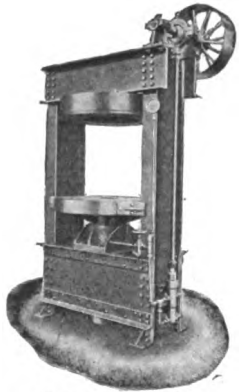
STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price **\$1.50**



Graham Roller Bearing Co., Coudersport, Pa.



Hydraulic Arbor Presses

work easier than any others

We make many sizes for many purposes.

WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.

Tire Applying Press

VULCAN
QUALITY
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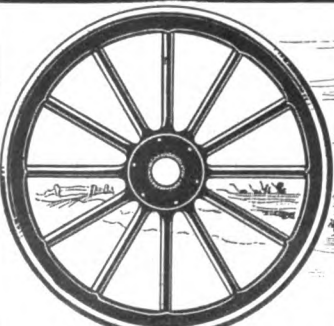
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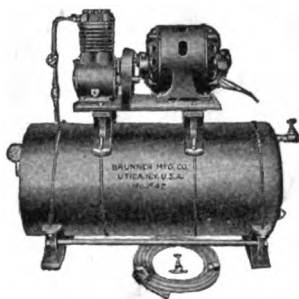
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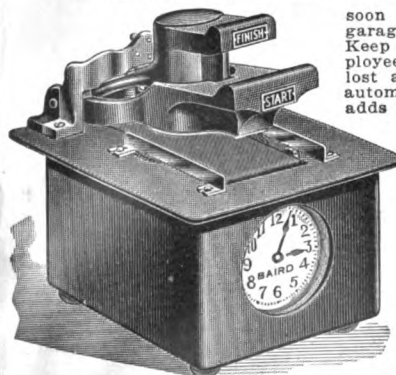
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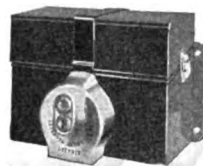
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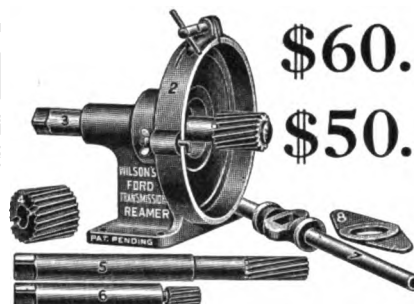


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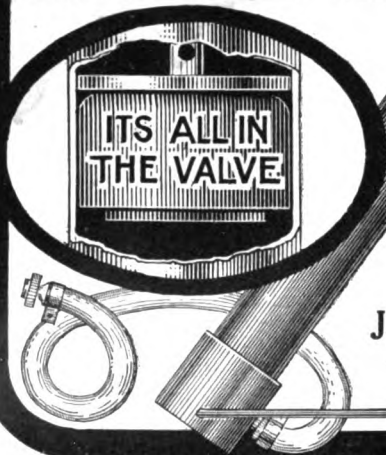
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Index to Advertisements

A	J
Adams & Elting..... —	Jenkins Vulcan Spring Co.... 48
Advance Automobile Access- ories Corp. 54	Jorgensen Mfg. Co..... 39
American Accessories Co.... 51	K
American Bolt & Screw Case Co. 49	Kennedy Car Liner & Bag Co. 42
American Floor Surfacing Ma- chine Co. —	Keys Piston Ring Co. 48
American Machine Products Co. 44	Kimball Tire & Rubber Co.... —
American Oil Pump & Tank Co., The 51	L
American Technical Society... 5	Lawrence & Co., L. 50
Aske Automatic Voltage Regu- lator Co. —	Lawson Co., The F. H. —
Atlas Auto Supply Co. —	Lourie Mfg. Co. 48
.....Inside Back Cover	M
Auto Cape Top Co..... 50	McDaniel Rubber Co., Leo. 43, 53
Auto Engine Works..... 50	Marvel Carburetor Co..... 6
Auto Salvage Co. 50	Marvel Machinery Co..... —
Auto Spring Repair Co. 42	Miami Traller Co. 4
Auto Wrecking Co. 50	Milwaukee Tank Works..... —
Automobile Accessories Co.... 51	N
B	National Cash Register Co... 37
Baird Equipment Co. 49	National Rubber Filler Co.... 4
Bearings Service Co..... 53	National Wire Wheel Works... 8
Bermo Co., A. J. 48	New York Lubricating Oil Co. 46
B. & M. Mfg. Co. 8	No-Leak-O Piston Ring Co.... 51
Boe Co., H. M. 45	Norma Company of America, The 9
Breco Electric Co. 44	O
Brunner Mfg. Co. 49	Olympian Motors Co..... —
Buettner Co., Chas. H. 51	P
Butler Mfg. Co. 50	Panvar Co. —
Buffum Tool Co. 43	Paro, H. G. Co. —
C	Phillips Engineering Co..... 49
Cassidy Co., Edward A. —	Pondelick Bros. 46
.....Inside Front Cover	Pruyn Ball Bearing Works... 49
Catelain, Andre G. 50	R
Chicago Baling Press Co..... 49	Reliance Co. 43
Chicago Solder Co. 41	Redden Motor Truck Co..... —
Commonwealth Edison Co. —	Romort Mfg. Co..... 41
Curtis Pneumatic Machinery Co. 35	S
D	St. Paul Welding & Mfg. Co... 50
Dearborn Truck Co. —	Scaife & Sons Co., Wm. B... 47
Defender Auto Lick Co..... 49	Schaler Co., C. A....Front Cover
Detroit Auto Radiator Co.... —	Schrader's Son, Inc., A..... 45
Detroit Weatherproof Body Co. —	Simplicity Wheel Co. 48
Dunton Co., M. W..... 47	Sprague Mfg. Co., E. H..... —
E	Standard Oil Co., of Indiana... —
Eccolene Company 3	States Chemical Co. —
Elgin Motor Car Corp..... 48	Storm Mfg. Co..... 43
Ever-Tight Piston Ring Co.... 6	Sunderland Machinery & Sup- ply Co. 50
F	T
Federal Sign System (Electric) —	Tungsten Mfg. Co. —
Flexiume Sign Co....Back Cover	Twitchell Gauge Co..... —
Forbes, J. F. 51	U
Franklin Mfg. Co. 53	United Engine & Mfg. Co.... 44
G	Universal Battery Co..... —
Ganschow Co., William..... 46	V
Garden City Spring Works.... 51	Vanderpool Vulcanizing Co... 47
Gill Mfg. Co. 39	Visible Gasoline Dispenser Co. 48
Globe Mfg. Co. 7	W
Graham Roller Bearing Co., The 48	Wagner Specialty Co..... 51
Greb Co., The 48	Warshawsky & Co..... 50
Greer College of Motoring.... 50	Webber & Co., P. H. 46
H	Western Electric Co. 35
Haney & Co., J. H. 51	Weston Electrical Instrument Co. 47
Harton & Co., Inc., Thos. J... —	White Star Refining Co. —
Harvey Spring & Forging Co. 10	Wiggins, J. B., Co. —
Haywood Tire & Equipment Co. —	Willard Co., The 44
Hobart Bros. 45	Williams Fdry. & Machine Co. —
Holmes & Bros., Inc., Robert. 45	Wilson, K. R. 49
Hooven Radiator Co. —	Z
Howell Co., The W. H..... 47	Zinke Co. 41
I	
Imperial Brass Mfg. Co..... —	
Inland Machine Works 51	
Iowa Novelty & Brass Wks... 50	

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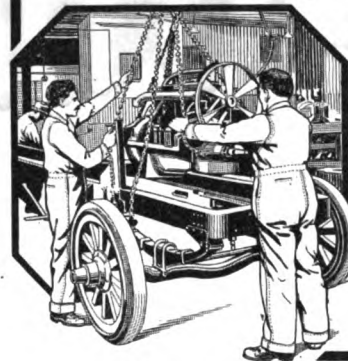
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dealers—everywhere

We are makers of the
cloth only.

Franklin Manufacturing Co.
133 Market Place, Baltimore, Md.

Like Aladdin's Magic WE MAKE NEW TIRES FROM OLD.

Your customers
can get another
5,000 miles out of their
old tires, and it makes
no difference whether
they are sand blistered,
punctured, rim cut, or
blown out—McDANIEL
WILL MAKE THEM
LIKE NEW.

Tire dealers and garage-
men should write us for
our special and attrac-
tive proposition.

With new tires becom-
ing scarce, and rubber
production greatly cur-
tailed, you can make
liberal profits represent-
ing us.

Simply send old tires
prepaid to the address
below, with your name
and address attached.

Write at once for our
proposition.

LEO McDANIEL RUBBER CO.
804 COMMERCIAL AVE. — CAIRO ILL.



ADVANCE CORK INSERT
TRANSMISSION LINING
FOR FORDS

Makes A Great Car Greater

Easy to identify by
(1) the name
(2) the red box

\$3 per set of three
West of Rockies, \$3.25
Outwears Several Sets of Ordinary Linings

Be sure to get the genuine CORK INSERT

Makes Any Ford Work Smoother

With Cork Insert Lining in the transmission, a Ford gets away quicker, smoother, quieter—it's a real *smile-bringer*. Under the brake it *glides* to a quiet stop. If the Ford owner's wife has been used to putting the coffee on when she hears him stopping, she'll have to make different arrangements. She won't hear him.

Cork Insert *doesn't chatter* like ordinary lining does—for it doesn't grab and slip—the cause of the vigorous vibration and the noise.

Lasts So Long It's Cheapest in the Long Run

Cork Insert is the most economical lining to use. It outwears several sets of ordinary linings. Saves the expense of frequent replacements. Saves the wear and tear of racking vibration and the repairs to the rear end that result. Cork Insert prolongs the life of the car, as well as increases its efficiency and the pleasure of driving.

Practically every jobber handles Cork Insert. It's a friend making as well as a money making product. It has made a world record of growth, coming into more extensive use the first year on the market than any other auto accessory ever offered the public. Are you getting your share of this profitable business?

Advance Automobile Accessories Corporation, Dept. K7-1, 56 E. Randolph St., Chicago

Makers also of Cork Insert Brake Lining for all cars—Oil-Proof—Slip-Proof—Squeak-Proof

A No-Stretch Fan Belt for Fords that Doesn't Stretch

Cork Insert doesn't slip as ordinary fan belts do—a slippage that runs as high as 50% to 75%. It keeps the engine cool by keeping the fan fanning. Gives exceedingly long wear.

\$1.00 for 1917-18 Fords—85c for 1916 and earlier models

CONVENIENT ORDER BLANK
Fill it out and goods will be delivered promptly through your jobber

Advance Automobile Accessories Corp., Dept. K7-1, 56 E. Randolph St., Chicago
Enter our order for

☐ doz. sets Cork Insert Transmission Lining for Fords
☐ doz. Cork Insert Fan Belts (for 1917-18 Fords)
☐ doz. Cork Insert Fan Belts (1916 or earlier Fords)

Name.....
City.....State.....



**With the rubber supply low
and prices high-TIRE-DOH sales
are easy and profitable.**

"Conserve the rubber supply" is one of the slogans of the times. It means that **every tire** must be kept in service as long as possible.

TIRE-DOH is the standard, recognized TIRE REPAIR OUTFIT for repairing casings, inner tubes, and all rubber goods. The use of TIRE-DOH has increased tremendously because it has made good wherever used.

From now on it will appeal to the motoring

public more strongly than ever before. It is the logical answer to the conservation question—as applied to rubber.

ECONOMICAL—Two cents' worth repairs the average puncture.

EASY TO USE—No heat or tools needed—use at home or on the road.

PERMANENT—Never leaks or loosens—outlasts life of tube.

If you are not already handling TIRE-DOH, order a supply NOW from your jobber, and write us for business-getting sales helps.

ATLAS AUTO SUPPLY COMPANY
680 W. Austin Ave.
CHICAGO - ILL.

THE STANDARD TIRE REPAIR OUTFIT





"Let's See You Put That Fire Out!" Said the Dealer

It was a gallon of gasoline ablaze, plus rags, plus waste soaked with stump turpentine—as hot a fire as you could find.

"Let's see you put that out!" said the skeptical dealer.

The Fire-Choke man threw one handful of his dry chemical into the base of the flame with a sweeping motion, than another. The fire was out. The carbon dioxide liberated when Fire-Choke came in contact with the flame had smothered it. That's the way Fire-Choke works!

Fire-Choke is a dry chemical fire annihilator which instantly extinguishes incipient fires. It has no mechanical complications—just throw it into the blaze with the hand. It is unequalled as a means of extinguishing fires, particularly fires involving gasoline or oil. It does no more harm to the materials than a handful of flour.

Dealers Say It Pays

Dealers who are handling Fire-Choke say it is a quick seller. It has the double appeal of quality and price.

Won't you let us send you full information concerning our special offer which we make in order to build up quick distribution.

Retail Price, \$3.50 and \$5.00



FIRE-CHOKER

*The Chemical That Fire Chiefs
Recommend*

THE FLEXLUME SIGN CO.

Niagara St. and Potomac Ave.

BUFFALO, N. Y.

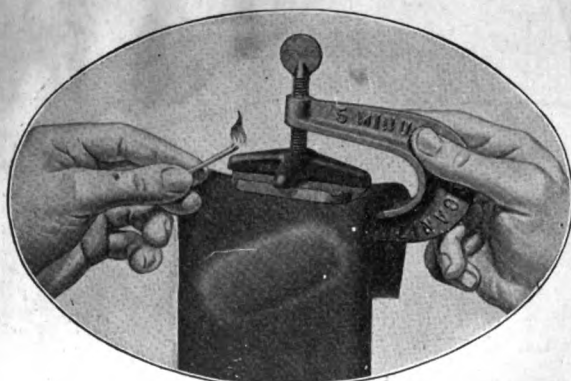
AMERICAN GARAGE & AUTO DEALER

Published Monthly
115 So. Michigan Ave.
CHICAGO, ILL.

NOVEMBER

1918

Vol. 9 — No. 11
10 Cents the Copy
\$1.00 Per Year



A Million Motorists Use It 4,000,000 More Need It

The limited supply and increasing cost of inner tubes make it necessary for motorists to repair punctures, cuts, tears and cracks—to keep their tubes in good repair—as good as new.

War conditions make it imperative for motorists to stop the easy-going, wasteful habit of carrying \$5 to \$15 worth of spare tubes—that deteriorate quickly—and scrapping perfectly good inner tubes that merely have a puncture, cut or tear—which can be repaired *permanently* with a Shaler 5-Minute Vulcanizer, quicker than a new tube can be inserted.

Saves Tubes — Saves Repair Bills

You can repair your own tubes—as good as new. It's easy and inexpensive. *The Shaler works automatically*—and without fail. Just touch a match to the non-flaming chemical fuel. In five minutes you have a firm, flat, "feather-edge," permanent repair—stronger than any "stuck on patch"—stronger than the tube itself. No gasoline, cement or flame, and no danger of injuring the tube. Carry it in your tool box for emergency use. It works in the wind, in any weather, anywhere. The heat is applied directly to the pure gum patch and does not extend to the tube itself.

Complete With 12 Patch and Heat Units \$1.50

The outfit includes the Vulcanizer—12 Patch & Heat Units (6 round for punctures, and 6 oblong for cuts)—complete, \$1.50. Extra Patch & Heat Units 75 cents per dozen.

Sold by All Accessory Dealers and Jobbers

TO DEALERS—To insure shipments—it is advisable to order from your jobber now. The great demand has exceeded our factory capacity, and shipments will be made according to priority in receipt of orders.

Catalog of the Complete Shaler Line of Vulcanizers for Motorists, Repair Shops and Garages mailed on request.

C. A. Shaler Co., 361 Fourth St., Waupun, Wis.
Oldest and Largest Manufacturers of Vulcanizers



Mends Tubes in 5 Minutes



Dealers' Announcement!

Here's dollar-making news for you. You know how fast Inland sales have *been* growing—you know that already over 3,000,000 Inlands are in use—but *watch Inlands from now on!*

We are putting behind Inland Piston Rings the most far-reaching advertising campaign ever planned. It will reach practically *all* of the *millions* of owners of not only automobiles, but of tractors, gasoline engines, trucks, motor boats—every possible prospect for piston rings. Beginning *this* month we are running

Full pages and half page ads in the Saturday Evening Post, Literary Digest, Sunset, Country Gentleman, Successful Farming, Progressive Farmer—and all the important automobile, truck and motor boat magazines in America and foreign countries.

This campaign will continue the *year* 'round—for every one of the twelve months. This tremendous advertising selling force, combined with the *recognized* mechanical superiority of the Inland over other piston rings, will make your business *hum* if you handle the Inland.

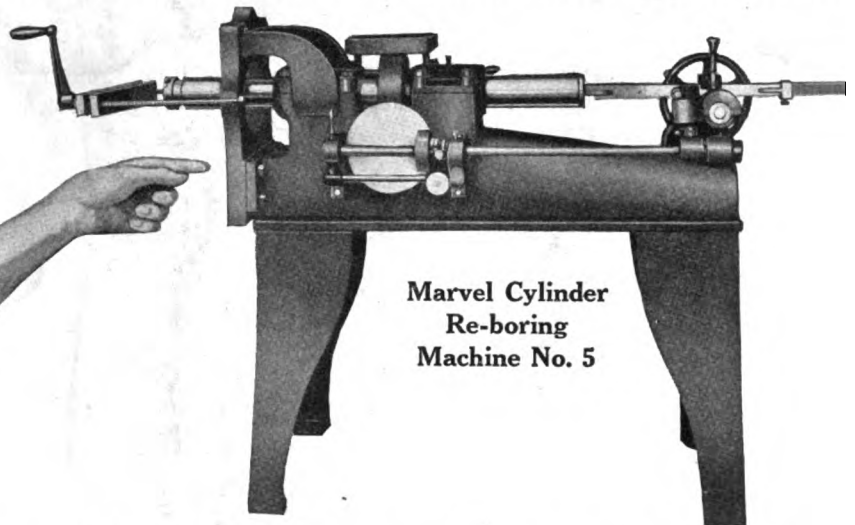
Get in line with us now—get the full benefit of our big campaign right from the start. If you haven't stocked Inlands, order from your jobber at once. Jobbers everywhere stock them.

INLAND

ONE-PIECE PISTON RING

The only piston ring that combines the simplicity, strength and low cost of *one-piece* construction with *completely gas-tight and oil-tight* construction. The patented Spiral Cut not only eliminates the gap but also makes a ring that uncoils in a perfect circle against the cylinder wall.

Inland Machine Works, 817 Mound Street, St. Louis, U. S. A.



Marvel Cylinder
Re-boring
Machine No. 5

EVERY AUTOMOBILE DEALER AND GARAGE MAN SHOULD HAVE ONE OF THESE MACHINES

Unless you have a MARVEL Cylinder Re-boring Machine No. 5 in your shop now—you cannot realize what it means to you.

The MARVEL No. 5 is in a class by itself—until you have had an opportunity of carefully considering its unusual features—until you see a MARVEL in operation it may be difficult to fully appreciate its superior qualities—a MARVEL No. 5 in your shop will speak for itself—after it begins to work your customers will speak for it.

A War Time Necessity—A Peace Time Winner

The MARVEL No. 5 is simplicity itself.

It is automatic—it secures for you the highest class of work.

It has an Automatic Stop which releases feed at any desired depth of cylinder, permitting the operator to do other work while re-boring.

It has a Friction Disc Feed ranging from 26 to 120 threads to the inch.

It is accurate to plus or minus five ten thousandths of an inch at the extreme extension of boring bar.

It is speedy—being from five to twenty times as fast as a grinder.

It has the capacity, as it will handle any gas engine cylinder from a motorcycle to a tractor.

It is the biggest business builder and profit maker that ever went into a repair shop.

It establishes you in a new line of work—permits you to completely overhaul used cars and put them in first class condition.

Don't Wait for the Tide to Turn



Get into this Profit Making business to bridge the gap of restricted production of automobiles. Equip your shop at once to Re-bore Engine Cylinders and Fit them with MARCO

Over-size Pistons.

Write at once for full details—let us send you a complete description of the MARVEL and show you how we help get the business.

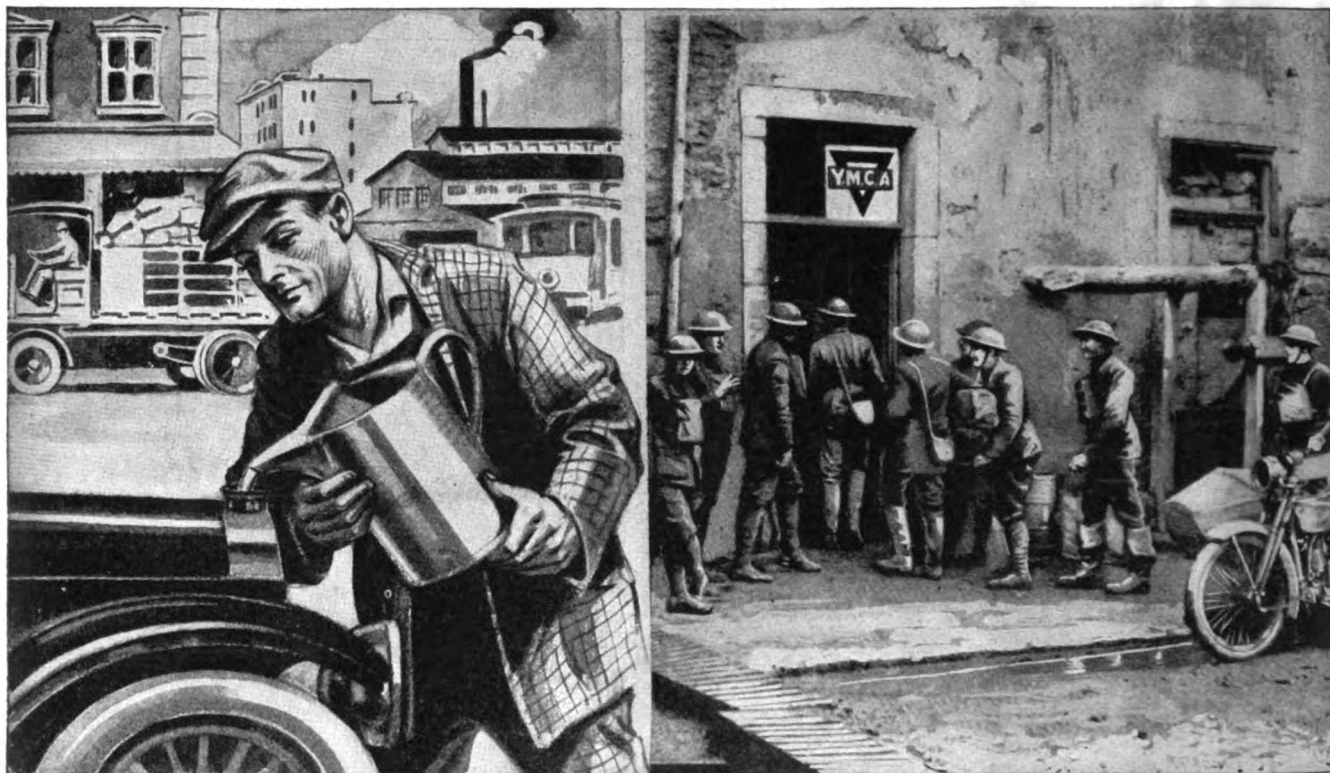


MARVEL MACHINERY COMPANY

1307 South Third St.

Minneapolis, Minnesota

In writing please use address in full—it expedites delivery.



You may want this man here

— BUT —

We need him "over there"

You Can Help Us Get Him

You might think it something of a sacrifice to deliberately talk with one of your best truck drivers and tactfully urge him to go to France to drive for the Y.M.C.A.—and it would be a sacrifice. But it wouldn't be much compared to that of the army boys who have to depend on Y.M.C.A. truck drivers for what little they can get of home comforts—would it?

The Y.M.C.A. in France Needs 75 Truck Drivers and 25 Automobile Mechanics every month. And you can help us get them.

We can take only men who are over 37 years old and are not in Class 1 of the draft. The men we want are hard to get at directly.

Will you call the drivers and mechanics in your employ—or whom you know—into a meeting—explain the situation to them—the great need for their service—the great and honorable service they can render—and then put us in touch with the men who may be willing to undertake this great service?

The Y. M. C. A. is doing a great big work in France—it is helping our fighting men to keep in fighting trim.

One of its greatest needs is adequate transport facilities. Y. M. C. A. service for nearly two million men requires a *lot* of transportation work.

We have to move our goods and keep them moving—from ships to warehouses, to canteens, and to points behind—and *on*—the fighting lines.

We have the goods and the trucks. We need the *men* to man those trucks and keep them going.

You business men—employers—executives of industrial works—can do more than any one else to get those men for us.

Will you do it?

Fill in the Coupon— Get full data

And then use your powerful influence to help us get these men. Next to going yourself it's one of the finest and most helpful pieces of war service you can render.

Ed M. Willis,

Y. M. C. A., 347 Madison Ave., New York.

It may be possible for me to get recruits for Y.M.C.A. truck service in France. Please send me full information regarding that service.

Signature

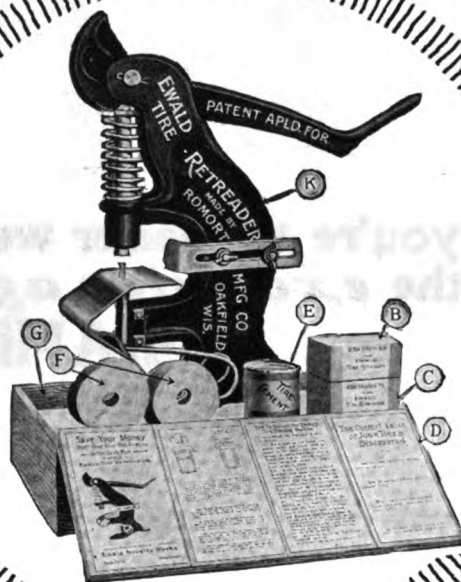
Street and No.

Town and State

How would
YOU like to make
**\$25 per day or
\$625 per month
more?**

TRADE MARK
Ewald

Tire Retreader Outfit



- A. Retreading Machine
- B. 250 Special Staples, $\frac{1}{2}$ " long
- C. 250 Special Staples, $\frac{5}{8}$ " long
- D. Full Sheet of Directions
- E. 1 Can Tire Cement
- F. 2 Rolls Rubber Reliner
- G. 1 Shipping Box

Price complete as shown, \$15.00

If you have your eye on the dollar sign and you are alert and eager to increase your business, and thus make larger profits, the EWALD TIRE RETREADER OUTFIT points the way.

You can easily staple 10 tires a day with the EWALD TIRE RETREADER and make \$2.50 per tire.

Would you like to make \$25 per day or \$625 per month?

This is the BIG chance for the tire repairman, and we want to help you get YOUR share!

**Every garageman, repairman
and tire repair shop needs it!**

Further particulars on request.

Factory Sales Department

THE ZINKE COMPANY

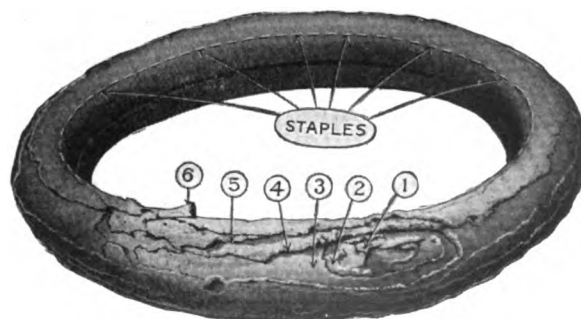
1323 So. Michigan Ave., CHICAGO, U. S. A.

Manufacturers

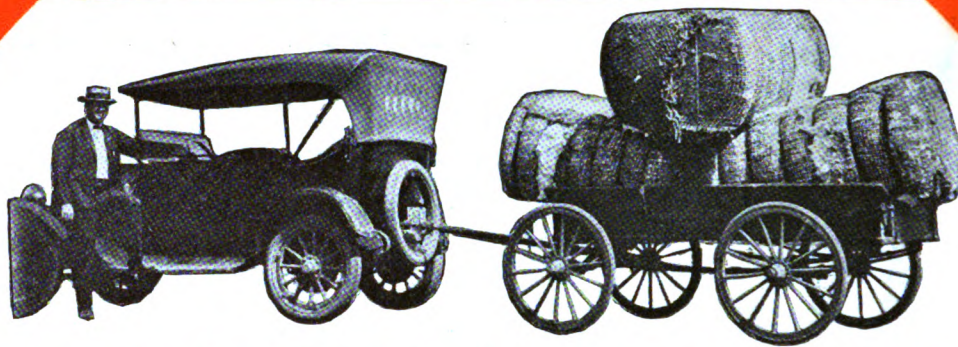
ROMORT MFG. COMPANY

OAKFIELD, WIS.

CHICAGO, ILL.



The above tires were stapled by the Ewald Tire Retreader and then run over two thousand miles. You can see the fabric at 1, 2, 3, 4, 5 and 6 as it wore away, but not a single staple pulled out.



**If you're the dealer we're looking for, you can have
the *exclusive agency* in your territory for
MIAMI TRAILERS**

The dealers who were quick to realize the possibilities of the trailer and had the initiative to go after this business, have greatly added to their profits during the past two years.

Today the demand for the trailer is greater than ever. It conserves man power and cuts hauling costs to such an extent that nearly every merchant and manufacturer in your locality is a prospect.

MIAMI TRAILERS are made in fourteen styles—there is a model for every purpose. Substantially built for heavy loads under automobile speed.

Write us today—Let us show you the possibilities of the trailer in your territory.

THE MIAMI TRAILER COMPANY
TROY - OHIO

You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

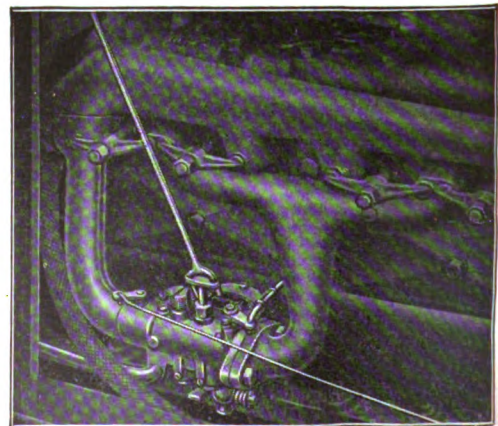
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

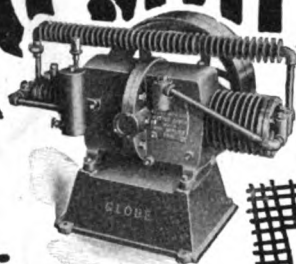
MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



Globe Compressors



**Before you buy
an air compressor—
it will pay you to
look into the merits of the
Globe**

This equipment has become very favorably known among garagemen for giving the best service at the greatest economy of power.

***Any garage which uses a Globe
Air Compressor speaks highly of it***

The accompanying letters are two of the many voluntary testimonials which we receive almost daily. GLOBE AIR COMPRESSORS give long service and clean oil-free air. No impurities can reach the tire. Fill in the coupon below and send it in.



**Globe Mfg. Company
BATTLE CREEK — MICH.**

Springfield, Ill. 1918
Globe Manufacturing Co.,
Battle Creek, Michigan.

Gentlemen:-

Inclosed find our check for _____ in payment of the two remaining notes on Air Compressor, and will say that the machine is giving the best of satisfaction, and we can recommend your goods to any one who is contemplating the purchase of Air Equipment.

Assuring you that if we need anything in your line we will be sure to call on you, we remain

Yours very truly,

(Name on application.)

Maquoketa, Ia. May 2, '18
Globe Manufacturing Co.,
Battle Creek, Mich.

Gentlemen:-

We have just completed the installment of our GLOBE pump and are using a 90 gallon tank as a container for the air. We find that the pump will fill this tank from nothing to 135 pounds pressure in quite a little less than a half an hour, to be exact about 19 minutes. We have it set so it will start pumping at 100 pounds and shut off at 135, and in using the 90 gallon tank we find it only takes five minutes to pump this 35 pounds of pressure. If it keeps on working saying that the saving of electricity used with this pump will almost pay the cost of it in a year to say nothing of the convenience of always having air up. We will say that we are satisfied, and putting the case in a very mild way, it certainly works like a charm.

Yours respectfully,

(Name on application.)

MAIL INFORMATION COUPON

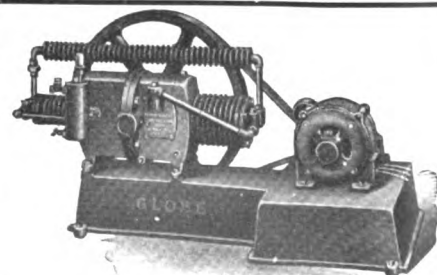
GLOBE MANUFACTURING COMPANY, Department B2, Battle Creek, Mich. A. G. & A. D.

Gentlemen: Without any obligation on my part, please send full information on the items checked (x) below:

- ☐ Air Compressor for Line Shaft Drive.
☐ Air Compressor for Direct Motor Drive. ☐ With Motor.
☐ Automatic Air Plant for Free Air. ☐ With Motor.
☐ Air Compressor with Air Cooled Gasoline Engine.
☐ "DEAD EASY" Tire Pump for resale.
☐ I have or can get Electric Current. ☐ Single Phase. ☐ Two Phase. ☐ Three Phase. ☐ Direct.
☐ Voltage. ☐ Frequency. ☐ Cycles.
I have power ☐ Steam ____ H. P. ☐ Gas Engine ____ H. P. ☐ Electric Motor ____ H. P.
I have a ☐ Garage. ☐ Tire Shop. ☐ Machine Shop.

Name _____ Date _____

Address _____



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Conservation with wire wheels

Nowadays conservation is the touchstone by which a product or an act is gauged. Conservation with wire wheels is sound in principle, and—better still—easily attained in practice.

With PASCO wire wheels you can save on gasoline, on tires, on springs, on engine. The greater wheel-safety and the increased riding-ease are also factors to be reckoned with. Don't let prejudice stand between you and the real, worth-while conservation that PASCO wheels can effect.

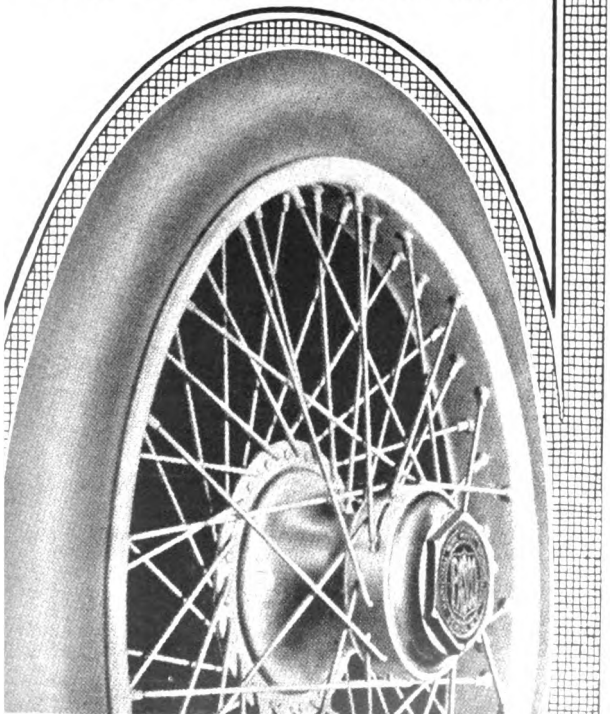
An ingenious safety lock, an indestructible hub-cap, and the tangent method of spoke-lacing are some of the features distinctive in PASCO. They are lightning-change wheels, easily removable with a wrench. And their beauty and staunch appearance have set a sharp standard.

Equip with PASCO wheels and buy W. S. S. with the money saved.

*DEALERS: Some territory
still open, write or wire.*

NATIONAL WIRE WHEEL WORKS

DEPT. C GENEVA, N. Y.
SERVICE STATIONS IN PRINCIPAL CITIES



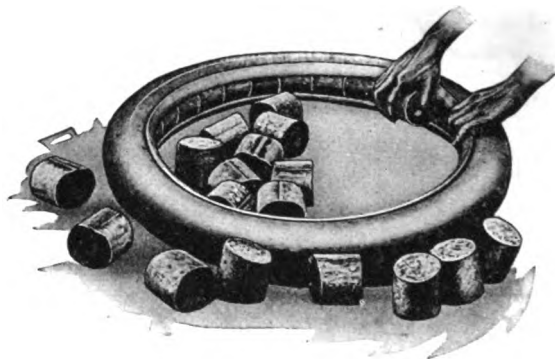
National Needs

have made curtailment of rubber imports necessary. Already the excess of demand over supply has caused an increase in tire prices—other increases are imminent.

It's Time Now for Economy

If your heart is in this war, you will clearly see the need of getting the last fraction of a mile out of your tires. You can do so by coupling your patriotism up with

National Tire Filler



Motorists Have No Tire Trouble Who Ride on This Perfect Substitute for Air

Rim-cut-proof, blowout-proof, puncture-proof tires are now a reality. Motoring is now freed from the shackles of tire trouble, and is made safe, comfortable and enjoyable.

National Rubber Tire Filler replaces the inner tube. It has all the resiliency of an air-filled tire with none of its disadvantages. It lasts indefinitely—40,000 miles or more. It has been in use for five years and has conclusively proven its superiority and economy over air-filled tires. Our factory taxed to capacity is proof positive of its great popularity.

**It rides as easy as air.
It cannot puncture or blowout.
It can be used on all style tires.
It doubles tire mileage.
It is easily installed.
It stimulates motoring.**

National Rubber Filler Company
210 College Street Midlothian, Texas

AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL

Some Figures	26
The Aircraft Report	26
Trucks Essential; Why Not Good Roads?	26-27

GENERAL

Plan for Christmas Trade Now	11
Throw Hats in the Air! But—KEEP FEET ON THE GROUND	12
Bearings Service Men Take Up New Duties	13
Farmers' Exposition at Toledo to Have Many Large Exhibits	13
Motor Trucks and the Farmer	13
Plan for Christmas Trade, Add Holiday Cash to Profits, by M. E. Faber	14-15-16
Thinks Local Shows Should Be Held	16
Other Opinions as to Shows	17-18
Packard Head Defends Vincent Against Hughes Arraignment	18-19
ACCESORIES	19
Marathon Firm Makes Cementless Tube Patch	19
Despatch Heaters Help to Start Cold Motors	19
Jorgensen Primer Vaporizes Gasoline	19
Rural Express Economical?	19
MANUFACTURER-DEALER HELPS	20
Curtis Pneumatic Machinery Co.	20
Columbus Varnish Co.	20
Northwestern Chemical Co.	20
Moore Transmission Gives More Ford Power Ranges	21
Year-Round Roads, Plea of Car Producing Firm	21
One Packard Efficiency Prize Won by Truck User in Chicago	21
Eccolene Tested by A. A. A. Contest Board	21
Another Prize Winning Window; Display Advice by Goodyear	22-23
White Has No Trucks to Sell; To Help Users of Other Kinds	23
Master Trucks Used in Service of Indiana Motor Express Line	25
New Tire Repair Book Issued by Miller Firm	25
Fundamental Salesmanship Needs	27
What Part of the Turkey Do YOU Want?	28-29
Small Cuts for Empire Agents to Use in War-Time Advertising	30-31
Amazon Firm Has New Cord Supertire	31
Garden City Spring Works Has Fine "Sunlight" Plant	31
Saxon Dealer Takes On Airplane Line	31
Replacement Part Makers Need Materials in War Time	33
Wilber Motor Stand Time Saver in Ford Repair Shops	34
Overland Cash to Build Lincoln Highway Stretch	38
Belgian Girl Refugees Help Make Liberty Motors	38
"Over-Way" Carrying Systems Save Time in Shop and Garage	40

DEPARTMENTS

How to Make the Shop Pay	24-25
Welding, Cutting and Brazing	32-33
Mechanical and Engineering Problems	34
Accessories and Garage Equipment	36-38
Buyers' Reference	52
Index to Advertisers	53

American Garage & Auto Dealer, Inc.

General Offices:
116 S. MICHIGAN AVENUE
CHICAGO, ILL.

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H. D. FARGO, Vice President E. C. HOLE, Vice President
E. T. CLISSOLD, Vice President
J. C. KELSEY, Secretary and Treasurer

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Subscription Per Annum (Postage Paid) \$1.00. Advertising Rates on Request.



"NORMA" PRECISION BALL BEARINGS

(PATENTED)

The ultimate measure of a car or truck is in the strength of its weakest—not of its strongest feature. Appearance may deceive, but performance will surely reveal the integrity—or otherwise—of the design, construction and equipment. Let your scrutiny of service qualities extend to every detail of every accessory.

There is a distinguishing mark by which magnetos and lighting generators which deserve your unqualified confidence may be identified. That is the presence of "NORMA" Ball Bearings—the standard bearings adopted by apparatus builders to maintain the high quality of their own product.

Be Sure—See That Your
Electrical Apparatus
Is "NORMA" Equipped.

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.



What Prominent Users and Prominent Engineers Think of ECCOLENE

ALEXANDER HAMILTON INSTITUTE
ASTOR PLACE, NEW YORK CITY
August 7, 1918

Auto Supply Company
1789 Broadway
New York City

Gentlemen:

I am pleasantly surprised at the results I have secured from your Eccolene.

Until recently I drove a Peerless which I ran on about ten to eleven miles per gallon of gasoline. I am now driving a Hudson Sedan which, I understand, runs also on about ten to eleven miles per gallon of gas.

I have made four tests with my Hudson Sedan on Eccolene and have gotten an average of a little over 15 miles per gallon of gasoline with the few ounces of Eccolene which you prescribed.

I feel that is an excellent record and Eccolene which you prescribed.

You may be sure that I shall continue using Eccolene from now on.

Yours very truly,
Ed Cassidy

LC-2L

AMERICAN AUTOMOBILE ASSOCIATION
ORGANIZED AT CHICAGO MARCH 1902

501 FIFTH AVENUE
NEW YORK CITY

August 22-1918.

The Edward A. Cassidy Co.,
New York City.

Gentlemen:-

I have a new automobile at a cost of \$2, thanks to Eccolene.

I have always been skeptical about using mixtures in my gasoline, but having been told by a friend of Eccolene who had used it, I decided to try it out. In the first place my engine was badly carbonized. After using Eccolene is about forty gallons of gas. I found that the carbon had been removed entirely, that I had a quicker get-away on first speed, more power on hills; I got from four to five more miles on a gallon of gasoline, have been able to cut down my Schaebler carburetor ten notches, thereby saving gas. - In fact it brings me back to the year of 1905 and when gasoline had power.

I cannot speak too highly of this liquid and shall certainly recommend it to all my friends. You may send me one gallon of Eccolene C.O.D.

Very truly yours,
Ed Cassidy

BOVEY
MOTOR METER

Dear Sir:-

I have used Eccolene for several months, and it gave me genuine pleasure to find it producing all of the claims made by its manufacturer.

I find that in both small and large motors, that the acceleration is improved - that carbon is kept down to minimum - and that gasoline saving is most apparent.

Needless to say, in view of these facts, I recommend it's use wherever I find an opportunity.

Very truly yours,
Mr. F. Ed. Spooner

To: Mr. F. Ed. Spooner,
c/o Detroit Athletic Club,
Detroit, Mich.

Date: 7/18/18

LOUIS CHEVROLET

Edward A. Cassidy Co.,
New York, N. Y.

Chicago, Ill., July 27th, 1918.

Gentlemen:-

This is to advise you that, in the Uniontown race of July 18th, I used your ECCOLENE in my Frontenac car, in which I won the Sweepstakes, breaking the track record and making the best time which has ever been made on the Speedway.

Yours very truly,
Paul Thurman

LC-2L

EDWARD A. CASSIDY CO.
ATTORNEYS AND ENGINEERS AT LAW
LUMBERVILLE, PENN.

July 25th, 1918.

The Eccolene Company,
Detroit, Mich.

Gentlemen:

I am trying ECCOLENE on my 1917 N. and so far it is doing all you claim for it. The motor seems to be fond of Eccolene, for I find that instead of the usual sixteen miles to the gallon, I am getting twenty, and on proper adjustment I am looking for more. I am adjusting the carburetor by degrees and I can see great improvement in the behavior of the motor. The motor is very quiet and powerful, and does not heat as much. I will advise later of results.

Yours very truly,
Ed Cassidy

THIS evidence from prominent users is conclusive proof of the remarkable qualities of ECCOLENE.

Do you not want to do your full part especially at this time, in the conservation of gasoline? ECCOLENE is guaranteed to give an increase in mileage of 25% per gallon of gasoline, thereby saving one-fourth of the gasoline consumption.

ECCOLENE also adds power and punch to the motor—produces more perfect combustion—will reduce carbon trouble—and lessen smoke and noise. Some engineers even claim that ECCOLENE is a revelation to motordom.

ECCOLENE means dollars and cents in the cash drawer and a rapid turn-over for it is a product that means repeat business.

Sales Prospects

To the live-up-to-date dealer who takes advantage of the opportunity offered through the sale of ECCOLENE, there is the prospect

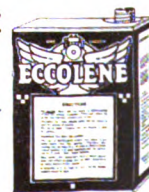
of a huge repeat business. There are over five million motor cars as well as millions of motor boats, tractors, stationary engines, etc., that will continually use ECCOLENE. Make your establishment headquarters for ECCOLENE.

	Prices
1 Quart	\$2.00
1 Gallon	7.00

For the convenience of truck fleet owners, ECCOLENE is also put up in five-gallon cans.

Sales Department
EDWARD A. CASSIDY CO., Inc.
Madison Ave., at 40th St. New York City

THE ECCOLENE COMPANY
Manufacturers
Detroit, Michigan



AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX. No. 11

CHICAGO

November, 1918

**Plan for
Christmas trade
now-
sell**

- Spotlights
- Trouble Lamps
- Case for Lamp Bulbs
- Sets of Spark Plugs
- Spark Plug Cleaner
- Moto-Meters
- Goggles
- Windshield Cleaners
- Car Locks
- Rim Tools
- Tire Gauges
- Vulcanizers
- Wrench Sets
- Flashlights
- Cigar Lighters
- Fire Extinguishers
- Hydrometers
- Voltmeters
- Radiator Emblems
- Rear View Mirrors
- Towing Cable
- Mud Hooks
- Route Guides
- Cushions
- Pedal Pads
- Gloves

**Get Your
stock ready
for early
Christmas
display**

**Decorate
your windows
and
accessory
department**

**Advertise
in
local
papers**

**Motorize
Christmas
this year
with your
trade**

**Boost
Auto
Accessories
for
Gifts**

*See Mr. Faber's article
on pages 14 and 15*

Throw Hats in the Air! *But* KEEP FEET ON THE GROUND

With the signing of the armistice agreement by Germany marking the downfall of the last and worst of civilization's enemies, it is a time for throwing hats into the air in rejoicing, but, so far as automotive merchants are concerned, it is also necessary to keep feet firmly on the ground.

Profits derived from the sale of new passenger cars have been the greatest source of revenue to a big proportion of the retail automotive tradesmen and a great many of them have consequently been on extremely short financial rations since this country entered the war. While announcement was made November 12 that passenger automobile manufacturers would be permitted, during the last six months of 1918, to produce 37½ per cent of their 1917 production, instead of 25 per cent as previously allowed, this does not mean that there will be enough new cars to fill orders.

With the great demand for steel to build ships showing no signs of letting down and the probability that demands for railroad equipment will be vastly increased in the near future it may be many months before the makers of passenger cars will be able to obtain enough steel to bring their production figures back to the pre-war totals. In addition, many firms that make thousands of passenger cars in normal times are still busy on war contracts of various kinds and may be engaged on them for months to come.

So it is only a wise provision for the automotive merchant to consider carefully how his business is to get along until he can again obtain enough new cars to fill the orders he will be able to obtain without much difficulty in the prosperous times that are immediately ahead. While the war is over, so far as the fighting is concerned, there must be a continuance for some months of war-time conditions so far as the supply of new passenger cars is concerned.

There are other automotive products, however, and if the automotive merchant will select those that can be sold to his neighbors by energetic work, backed up by good advertising, there need be no fear of the financial future. The products that should be pushed during the coming months, while the passenger car production is being adjusted, include the following:

ACCESSORIES

TRUCKS

TRAILERS

TRUCK-MAKERS

TRACTORS

FARM ELECTRIC PLANTS.

Dealers located in small cities and towns are especially urged to add new lines to their passenger car business, because unless they do they will allow much profitable trade to pass their doors. There are always customers for these products and when the dealer tells a passenger car customer looking for them that he does not sell them, he fails in his duty as a merchant and forces a prospective buyer to carry his money away—perhaps even out of his own community.

Accessories should be handled by all passenger car dealers and garage owners, and also by those repair shop operators that have room for showcases. Many a car dealer has found that trucks, trailers and truck-makers could be sold at a profit during the last few months but many others have been neglecting this source of revenue. Tractors and farm electric plants have always seemed natural products for small town dealers to sell but lately several automotive dealers in the largest cities have been selling them with strikingly pleasant results.

Competent authorities have expressed the belief that there will be a great boom in the automotive business as soon as things have settled down after the cessation of war activities. But in the meantime, it will be well to make plans at once to sell those products that can be obtained immediately and on which good profits can be realized. Those automotive merchants who sell the full line of automotive products during the coming months will not only be able to keep their sales figures somewhere near where they would like them but in addition they will be storing up a reserve of valuable good will among the new and old customers served with the newer lines.

When the publisher of *The American Lumberman* returned to Chicago recently from a trip to California he predicted that the Pacific Coast would soon be the greatest place in the world for the sale of motor trucks. He heard of dozens of business men and firms that are only waiting for truck production to catch up with the war-and-peace demand before placing orders for quantities. This is a condition that is quite general all over the country and the man who starts his truck selling NOW will profit most later.

The publisher also expressed the opinion that a good many of the twenty million and more Liberty Bond holders will buy passenger cars. He said that while he knows many thousands of bond owners will help the lumber business by building homes that there is bound to be a very large number of passenger cars absorbed by these folks, many of whom now have more money in one lump than they ever possessed before.

Bearings Service Men Take Up New Duties

C. L. Hodgson, who has been manager of the Omaha branch for the Bearings Service Co., has been appointed central district manager with headquarters in Chicago, according to an announcement by General Manager A. K. Hobner of the Bearings Service Co., Detroit.



T. L. Hutchison

Chicago motorists will receive especially good bearings service.

T. L. Hutchison, who has been a special



W. C. L. Hodgson

traveling representative for the Bearings Service Co., has been made manager of the Omaha branch to succeed Mr. Hodgson. Like Mr. Hodgson, Mr. Hutchison worked up from the bottom.

V. C. Fuller, formerly of the Dictaphone Company, has been appointed special traveling representative of the Bearings Service Co. of Detroit, with headquarters at the company's main office. He will be in contact with the company's distributors.

Food which formerly went to waste in and around Chattanooga, Tennessee, Atlanta, Georgia and Birmingham, Alabama, is now reaching the consumer, thanks to the efforts of G. E. Glaser, of Chattanooga, who is operating regular lines of Rural Motor Express to the principal cities of Tennessee, Alabama and Georgia. The rapidity and economical value of the service is giving the farmer larger profits and the consumer more food at less cost. Mr. Glaser has handled 987 shipments in the brief time he has been operating.

Farmers' Exposition at Toledo to Have Many Large Exhibits

Deluged with reservations for display of exhibits, officials of the Fifth Annual National Farmers' Exposition at Toledo, December 6 to 14, have begun curtailing some of the larger exhibitors from western states in order to accommodate the central and eastern states.

The State of Ohio Apple Show promises to be one of the leading features. General Manager H. V. Buelow, in looking over the vast array of space reservations for the Terminal Auditorium, declared that the educational policy of the exposition which he has steadfastly adhered to in previous shows indicates that the country has been vastly benefited by the work done.

"This is amply illustrated this year," he says, "from the war garden exhibits of Toledo and Lucas county and from the farms of the Central States. The American farmer, the backbone of the world, is more widely recognized today than at any other time in the history of the nation," Manager Buelow states. "The patriotism of the American farmer never was more ably illustrated than in these recent years when the Government called on him for greater acreage and larger crops that we might keep other nations from starving. The farmer readily rallied to this call, and today is making ready, even for larger crops of every description."

The exposition, while primarily for the

the display of their products and will hold demonstrations daily. Makers of automobile trucks also realize the value of this vast mid-winter exposition.

Invitations to the formal opening of the exposition have been sent to former President Theodore Roosevelt and to Governor James M. Cox. The Federal Government in the Department of Agriculture also has taken cognizance of the exposition and will have a good roads exhibit besides special lectures from its various departments.

Space has been engaged to show the following tractors: Advance Rumely, Avery, Farmer Boy, Fordson, Greyhound, Hart-Parr, International Motor Cultivator, Lauson, Mogul, Moline, Happy Farmer, R-P, Staude and Titan. Truck exhibits will include Denby, Dodge, Graham, International, Kissel, Maxwell, Republic, Standard, Reo and American Wagon Co.

Motor Trucks and the Farmer

While a good motor truck is often considered an expensive investment it is without doubt an extremely profitable one for any farmer who produces on a fairly large scale. This is clearly demonstrated by the experience of a farmer in California, who has to haul his fruit and produce thirty miles to the railroad. Whereas it took his horse-drawn vehicle two days to make a single round trip, with his motor truck he makes two round trips a day.

Time in California is not a whit more valuable than it is in every other state in the Union. Every one has the allotted twenty-four hours every day—no more, no less—yet some do twice the work of others in this 86,400 seconds. Some are naturally more efficient than others, some adopt methods and machines which are time savers—money makers.

The motor truck is built for this particular purpose—to save time and make money for the operator.

The day has passed when it is profitable, generally, to use oxen to till the soil and market the grain.

The tractor and motor truck move in keeping with the times—Twentieth Century—MOVE ON!

(From Service.)



Show Manager H. V. Buelow

farming interests, will also take in the industrial side of the nation's life. To this end manufacturers of farm tractors of every description have reserved space for

Plan for Christmas Trade, Add Holiday Cash to Profits

By M. E. FABER.

While the small town merchant is envying the big town storekeeper his handsome show-windows and the prospective customers that crowd past them, the big town tradesman is wishing that he could have the intimate acquaintance with his customers that the small town dealer enjoys.

Suppose we put ourselves in the place of a small town car owner for just a few minutes and see if we can get his slant on what we as accessory merchants have to sell. It is particularly appropriate that we get into this frame of mind P. D. Q. because the driving season with its demand for touring necessities is almost over in most parts of the country. It is a case of hibernate for the next few months or keep the cash register jingling with sales that are obtained by methods that we haven't had time to use during the busy repair season.

There are, it is true, quite a number of seasonal articles in the way of automobile accessories; that is, things that add to the comfort and convenience of driving in cold weather. We will sell a certain amount of them whether we try or not if we only have them in stock.

But,—how many motor car owners know that a fully charged battery practically cannot freeze, and how many of them have hydrometers to tell them whether their batteries have a safe charge? Never thought of a hydrometer as a *winter* accessory, did you? A brief note to twenty-five of your customers ought to make a dozen sales—don't wait for people to come and ask you for a thing of this sort and how to use it, call it to their attention.

Radiator mixtures are common, of course. In fact, they are almost indispensable. How many of your cus-

tomers know that while the contents of a radiator may not freeze, they will nevertheless become so cold and stay so cold that they put a tremendous strain on the starting mechanism and don't help to make low fuel consumption records? It's an old story to you, but how many of *your customers* know it? Tell these people that radiator and hood covers are more than ornaments and *why*. They won't come and ask you about it. It's up to you to do

**Auto Accessories are
appropriate as Christmas
Gifts and will be most
appreciated by your
relatives or friends.
Consult us on the gift to buy.**
(your) GARAGE
A Busy Street — Any City

the selling because you are in business to make all you can out of it.

A little sale like one of these may not seem worth any effort at all as compared with the energy we would put on selling a car—but don't overlook this point, there's a thirty or fifty per cent profit in sight as against a ten per cent profit or even less on the sale of a car after the sale is finally finished and the car is delivered—**AND THERE AREN'T ANY CARS TO SELL NOW ANYWAY.**

Christmas will be here in a little while, too. People are wondering now what kind of useful Christmas presents to buy their friends. Most of them have friends who own automobiles and if you would just take advantage of their indecision by injecting a little hunch to the effect that "something for the car" would be a welcome variety for this year it would bring into your place of business many faces that might otherwise never spend a cent with you.

Follow out the idea along these lines:

First, and most important. Decide that you are going to make a success of it even if it does incur a little trouble. Otherwise you may as well



make up your mind that your effort will be wasted.

Second. Remember that you are going after business from people who are accustomed to do their Christmas shopping in stores that are clean and neat and orderly. That means possibly that your accessory department will require a radical dressing-up to catch the holiday spirit.

Don't cover up the dirt—get rid of it—it doesn't sell. You are going to cater to the feminine trade now and you know what they think about places that aren't in apple-pie order. You know what we mean—make your place look and feel like the place where your wife would like to buy a Christmas present for you. *And neatness won't drive any of the men customers away, either.*

Third. Now is the time to order your stock so that everything can be on hand and ready for display not later than December 10, and the earlier the better. Stock keeps clean better in winter than in summer when dust and flies are at their worst, and a display of two or three weeks will not ruin the appearance of the goods you show.

As to choice of stock, let's look through our jobbers' catalogs and see what we can find that's reasonable in price and makes the kind of a showing that will tempt a customer who is buying something for a gift. Most people buy *presents* as much on a basis of appearance as for utility. Here's a brief list of some of the obvious items and use your own judgment about quantity, keeping in mind that whatever may be left over can be sold next season as well as now:

Spotlights
Trouble Lamps
Case for Lamp Bulbs
Sets of Spark Plugs
Spark Plug Cleaner
Moto-Meters
Goggles
Windshield Cleaners
Car Locks
Rim Tools
Tire Gauges
Vulcanizers
Wrench Sets

Flashlights
Cigar Lighters
Fire Extinguishers
Hydrometers
Voltmeters
Radiator Emblems
Rear View Mirrors
Towing Cable
Mud Hooks
Route Guides
Cushions
Pedal Pads
Gloves

The above suggestions will do for a basis to work from. There are lots of other things that will come to mind as you go through your catalogs.

Fourth. Now comes the plan for the selling campaign. Beginning December 1, take small space at least once a week for advertisements in your newspapers to tell the public that you are ready to help them solve the gift problem so far as gifts for automobile owners are concerned. List a few of your accessories in the advertisements—if you want to illustrate them the manufacturers will furnish cuts.

Get together with your printer on the preparation of an announcement card calling attention again to the appropriateness of automobile accessories for gifts, and while the cards are being printed start addressing envelopes to the list you want to cover. Don't confine your mailing, which should be about a week before Christmas, to car owners.



Think of some of the friends who don't have cars and who have been taken on trips during the past season and are looking for a fitting way to show their appreciation. Also remember that in Mr. Motorist's family it is Mrs. Motorist who is most likely to have a good deal to say about the choice of gifts for friend husband and see that she gets one of your cards.

Your show window will want to get on the job too. As a suggestion for display that by its very usualness in almost any store, but which by virtue of its unusual location would attract attention, drape your window in white with plenty of glittering tinsel and rig up in the center of it a Christmas tree trimmed with your accessories.

A stocking or two filled with toys that you can pass on to the kids a little later will help carry out the idea. Maybe some of your friends among the merchants will have some decorative material left over from last year that they haven't use for this time. See if you can't get some of it.

Attractiveness is absolutely essential. Every article in the window should be cleaned and polished. Preferably

ANY-TOWN NEWSPAPER

<p>CAR PARTS ALUMINUMS AND STEELS</p> <p>WHEELS IN SET AND RIMS</p> <p>NO. 10000 AND RIMS</p> <p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p>	<p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p>	<p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p>	<p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p> <p>JOHN TOLSON AUTO TIRE</p> <p>CAR PARTS AND RIMS</p> <p>JOHN JONES AUTO TIRE</p>
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Advertise
a list of
Accessories
appropriate
as gifts
in your
local
newspaper

the original package, if it has advertising value, should be shown with each accessory and where that is impossible, have descriptive circulars on hand or a lettered card to tell what each thing is and what it does. Don't forget for a minute that we are after the feminine trade and we must make it easy for the ladies to understand and buy.

Of course, a painted sign, either on the window or on the back-ground carrying out the idea of "Motorized Christmas" or "Santa Claus Up to Date" would be valuable in connecting your window with your advertising.

Give this a trial. It has been done successfully.

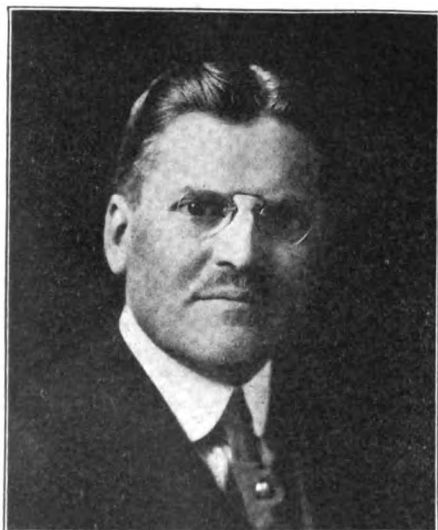
Have a photograph of your window taken. We will pay for it if you will send it in and tell us how your Christmas drive was planned and what results it brought. There is no reason why a big slice of the holiday money should not be added to your profits.

Thinks Local Shows Should Be Held

¶ Mr. Campbell's article appeared in our October number and has been the subject of much discussion among automotive merchants all over the country. Some of the views of prominent tradesmen on the "show or no show" question are printed on the following page. All of them were written before the armistice was signed and previous to the time when the War Industries Board lifted its ban on industrial exhibitions.

BY CHESTER I. CAMPBELL,
Manager Boston Automobile Show.

"To have a Show or not to have a Show." That seems to be the important question in the minds of the manufacturers as well as the automobile dealers in the large cities. The action of the National Automobile Chamber of Commerce against holding shows is receiving both favorable and unfavorable comment among the trade.



Chester I. Campbell.

There is not a dealer but what would say "Amen! and Amen!" to that if that thing would tend towards winning the war. There is not a dealer or a manufacturer but what would approve of that action if it were necessary to cease entirely, not only the manufacture of automobiles, but the use of them.

The time has long passed when the automobile is even considered a vehicle of pleasure; it is strictly a passenger car now, and it is estimated that nearly ninety per cent of the cars used are used for business purposes. The fact that a business man uses his car during the day to save time in conducting his business and for various other business requirements, does not lay aside the claim that it is a car for business simply because he may use it for a few hours some evening for what might be termed pleasure driving.

We all approve the action of the Government in curtailing the output of the various factories as we have their word for it that the facilities of these factories are needed for war work. But the automobile business has not

ceased, and while the production may be very materially reduced the fact still remains that there will be a production both in passenger and commercial cars.

When the war is won those manufacturers who have turned large portions of their plants over to war work will desire to resume their automobile work, and the production then will increase as the demand warrants.

It is a proven fact that the interest in automobiles each spring has been materially increased by the shows, more especially those held by the various dealers' associations in numerous sections of the country. That the statement which the dealers have made for years past that the automobile was a necessity and not a luxury, that it was shown to the business interests that it meant the saving of money and time to the business man, is of sufficient importance, in my opinion, to warrant the automobile dealers in holding their shows in 1919.

I am not willing to admit it is unpatriotic, just as I am not willing to admit that the automobile is a "non-essential." If I admitted the latter I must admit the former.

The newspapers of our country have been most generous in their publicity in years past, due to the support which the manufacturers and dealers have accorded them. The annual automobile shows have added much towards securing their co-operation and as publicity of the right sort it is of vital interest to the automobile world that this item should be taken into consideration when we go so far as to say we will cut out the automobile show.

It is unnecessary for me to remind many of the older dealers who were interested in the bicycle business, that the downfall of that business was due to the fact that the powers who controlled the trade at that time felt they were big enough and strong enough to handle the business without publicity, advertising and shows. The result is clearly evident by the condition of the bicycle business today.

There is, however, one good argument against the holding of the shows, and that one is in reference to the consumption of coal for heating purposes; but that can

be easily adjusted by holding the shows a little later in the spring when practically no heat is required.

I hope the automobile dealers' association in the various parts of the country will consider the matter very carefully, and while I would be one of the last ones to advise anything which might savor of unpatriotism, I am convinced in my own mind that we would be doing an in-

justice to many of the working men and an injustice to the public, not to continue to show, even though it may be found impossible to exhibit strictly 1919 or 1920 models.

Let us keep the interest in the passenger car and the commercial car as near as possible up to the standard, consistent with war conditions.

Other Opinions as to Shows

R. E. Lee, Manager

St. Louis Automobile Show

I am prepared to agree with our friend Chester I. Campbell of Boston Automobile Show fame in his belief that the automobile show is a very important factor in the automobile business, and fully convinced that it goes far toward psychologically suggesting to people the value to them of an automobile, and from past experiences at the automobile shows in St. Louis I know that hundreds and even thousands of automobiles are sold at or through shows.

I also believe that the date for holding automobile shows should be set as late as April, which is the time at which the mind of the public naturally turns toward buying a car. This may not be exactly the date to catch the dealers, but it certainly is better for interesting the individual buyer.

Announcement was made November 14 at Washington by the War Industries Board that it had lifted its ban on trade exhibits, which, of course, means that it has withdrawn its objection to the holding of automotive shows. It is reported that the board of directors of the National Automobile Chamber of Commerce will hold a meeting at the organization's New York office during the week beginning November 18, at which time the subject of holding the regular annual National automobile shows at Chicago and New York will be considered. It has also been rumored that if the manufacturer's body decides not to promote its regular winter exhibitions at Chicago and New York that there is a possibility of the dealers' associations of the two cities holding local shows of their own, but somewhat later in the season and nearer the time for retail buying.

John L. Brock, President, Trenton

Automobile Trade Association

Replying to yours in reference to advisability of holding automobile shows this winter.

While we appreciate the present conditions and want to do everything within our power to assist the government, or in other words not do anything that would be a detriment or against the government's wishes, at the same time, on account of the magnitude of the automobile business, its present uses and the many garages and dealers interested therein and depending upon same, it would appear if the past shows have been a general benefit, the absence of one this year would be harmful.

The show in my judgment would be no more unpatriotic than our attempts to dispose of what cars we may secure. The business will continue along the previous lines after the war and the public could be acquainted with what they may expect when our business becomes normal.

• If coal is a consideration, the dates could be set back until warmer weather—and all shows could get along with much less coal if required, as it is not necessary to maintain the high temperature as heretofore.

I. Campbell of Boston, beg to advise that at this moment I am undecided on what policy to adopt in regard to this subject.

However, I feel that there are going to be shows, and that there will surely be shows if the international situation clears up. At the present time we have decided to not hold a show in Milwaukee this year.

John B. Orman, Manager

Indianapolis Automobile Show

I realize that anything pertaining to the automobile is a question at this time. Regarding automobile shows, I expect that the showless season will have to come along as it seems in vogue now to have all the *less* things possible, and it will be a hard matter to change the trend, right or wrong, without being looked upon with suspicion.

In my personal opinion there is no real good reason for discontinuing automotive shows, other than the fact that it looks very much as though there will be no cars to show. If the dealers were assured of having cars to exhibit I do not believe that shows should be dropped.

The Indianapolis Automobile Trade Association held its Eighteenth Annual Automotive Exhibition in conjunction with the State Fair here last September, and it was very successful. Many trucks were sold, which I am sure greatly facilitated the government's desire to save freight cars. A large number of tractors were disposed of, that again worked in mighty well with the govern-

Bart J. Ruddle, Manager

Milwaukee Automobile Show

Replying to yours of October 8, with the enclosure of the article on the holding of automobile shows by Chester

ments plea, to raise more food, and the fellows that sold them made a little more money to loan the government through the purchase of Liberty Bonds. So from any point of view I take, it seems to me that our automotive exhibit helped everybody concerned.

Automotive exhibits, in my opinion, are educational projects. The truck owner comes in contact with salesmen who are constantly preaching good roads, and return loads, while the farmer is closely brought in touch with tractors, gas engines, lighting plants and other farm equipment that help to make the family life on the farm a more happy, as well as a more profitable one, by effecting a saving in nearly every branch of farm production.

It is possible that the National Automobile Chamber of Commerce recommends the elimination of motor car shows, but we must take into consideration that the members of that organization are conducting their business on a larger scale than ever, nearly all having large government contracts to keep them going. But the dealers, and there are thousands upon thousands of them, have not the government contracts to fall back upon, yet they must strive to keep their business going. They have built their businesses up until they have in the aggregate reached gigantic proportions, and automotive shows have done much to build the business to its present immensity. To side-step them now will mean a loss of interest and a consequent decrease in demand that will take years to re-establish. I cannot believe that the government really wants anything that tends to build up such a great industry as the motor car merchants of this country have built, discontinued.

We all want to help win this war, and I honestly believe that we are all helping and in every manner that is possible and practical. If it is a positive fact that the

elimination of automobile exhibitions will help us to win the war, or help those boys who are winning it for us, or if the holding of shows conflicts in any manner with the War Board's conservation movements, then stop all shows. But if the closing of the shows will not help in that supreme desire, then go on with them wherever possible. If shows are to be closed I think the War Industries Board should indicate by request that they believe it advisable to discontinue them until victory is ours, rather than to close because some body of men, who have nothing at stake, and who represent not near so many people as the retail motor merchant represents, requests closing.

E. E. Peake, Pres., National Ass'n of Automobile Show Mgrs.

Your letter of October 3 was received during the writer's absence from the city, hence the delay in answering.

I believe the matter of automobile shows for this year has been finally determined by the War Board and I am satisfied that there is no necessity of trying to open the matter up.

I was in Washington 10 days ago and talked with one member of the War Board personally on this question and I am convinced that the demand for transportation, fuel, etc., is such that it would not be wise to hold any such expositions this year.

It looks as though the war cloud might pass, let us hope that it does, and if it does by another year things will be in a settled condition and we will more than get even on our discontinuance this year.

Packard Head Defends Vincent Against Arraignment by Hughes

America needed an aviation engine, needed it at the earliest possible moment, and J. G. Vincent, the engineer in charge, cut the entanglements of red tape to get the needed results. That, in brief, is the Packard Motor Car Company's explanation of the course which resulted in Lt.-Col. J. G. Vincent's arraignment in the Hughes report on the aircraft program.

It is pointed out that the Packard Company had done aviation engine development work available to the government at the outbreak of the war; J. G. Vincent had been in charge of engineering on that work, and the war need was to get a war engine for the United States air service and get

it quickly even at the expense of rules and routine.

The statement by Alvan Macauley, Packard president and general manager, follows:

"The papers contain extracts from and comments upon the report of Judge Hughes, following his investigation of the aircraft situation. We are especially concerned regarding what he has to say, and the comment concerning Lt.-Col. J. G. Vincent.

"Judge Hughes' report, I am advised, gives credit for the invention and creation of the Liberty motor to the Packard Motor Car Company and to Colonel Vincent while he was still vice president of this company, in charge of engineering. Shortly after

the Liberty motor was created, Mr. Vincent resigned his large salary with this company, to accept the position as chief engineer of the Liberty motor, for the Government, at a salary about one-fifth as large.

"The Liberty engine having been created, there was no Government organization to expedite its production. The crying need was for a man capable of cutting the entanglements of Government red tape, created during peace times, and to get results.

"Preliminary models were ready within about a week, and a complete ready-to-operate Liberty motor was built, by night and day effort, within a month from the time the Packard Company received instructions from the Government to proceed.

"The charge against Col. Vincent is that the routine of the transaction was not handled in the orthodox Govern-

ment manner. The splendid results are admitted; the splendid success of the Liberty motor is now known to the world. The sole charge is a technical one.

"Red tape had to be cut and it was severed. The accomplishment of results was put ahead of the technical correctness of the method. It cost both Col. Vincent and the Packard Motor Car Company heavily to develop the Liberty motor, and neither

has asked one cent of recompense for that development.

"The Packard Company's patents and inventions—upon which it had spent several hundred thousand dollars before the declaration of war, were expressly donated to the Government for use during the war, gratis. All of which is a matter of written record. Our opinion is that if there had been more red tape cut at Washington during the early stages of

the war preparations, we would have been in shape to win the war even earlier.

"Lt. Col. Vincent, being an army officer, is, under the rules of the service, precluded from making any reply to, or denial of the charges against him. But the facts are perfectly clear, and as we are not under the restraint upon him, we cannot remain silent while even a technical charge is leveled against him."

ACCES\$SORIES

MARATHON FIRM MAKES CEMENTLESS TUBE PATCH

Dealers who carry the Marathon cementless tube patches should have no trouble in making rapid sales. The quality is of the best, both as regards material and workmanship. The adherence is said to be re-



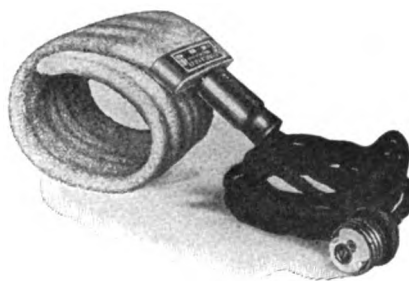
markable and they stick when properly applied.

The red molded cementless patches are high grade antimony composition and the grey is pure gum. The cement used is a quick setting variety that causes immediate adherence.

The patches are designed for quick road repairs to tubes and will last for the life of the tube. They are put up under the customer's own brand if ordered in sufficient quantities. Full information will be supplied by the Marathon Tire and Rubber Co., Cuyahoga Falls, Ohio.

DESPATCH HEATERS HELP TO START COLD MOTORS

Automotive merchants desiring to increase their sales of cold-weather accessories are invited to write to the Despatch Mfg. Co., Minneapolis, Minn., for dealers' prices on Despatch flexible electric heaters and mention the AMERICAN GARAGE & AUTO DEALER. Every automobile owner who has an unheated garage is a prospective buyer, as the device is attachable to any lighting socket; radiates a large volume of high heat and can be used in any position in all sorts of places.



The reason cars are hard to start is that during the long cold nights the oil in the cylinders and crank case gets stiff and calls for extra power to start. The cylinders are cold, the carburetor is cold and gasolene is cold, which makes vaporization of the fuel difficult and the starter often fails to do its work.

When a Despatch flexible heater is used it is placed on the carburetor with one end against the cylinders or crankcase. Then the current is turned on, the hood shut down and a cover thrown over it. If this is done before breakfast the engine will start as easily as in summer when the owner wishes to start out after breakfast.

JORGENSEN PRIMER VAPORIZES GASOLENE

Two essential conditions necessary for efficient priming are claimed for the Jorgensen vapor primers. First they thoroughly vaporize the gasolene, and, second, they force this gaseous mixture past the open intake valves, directly to the point of ignition, making the results positive. These primers are being used by manufacturers of passenger cars, commercial motor vehicles and tractors as standard equipment.

The special Jorgensen Ford outfit is easy to attach with the special connections furnished with it. The selling price is very reasonable and full information will be given to automotive merchants who address the maker, the Jorgensen Mfg. Co., Wau-paca, Wis.

Rural Express Economical?

Recently two motor trucks of a regular rural express line, one of $\frac{3}{4}$ -ton capacity, and the other of $1\frac{1}{2}$ tons, operating over a route between Albert Lea, Minnesota, and Mason City, Iowa, a distance of 42 miles, in a driving rainstorm, over a new dirt grade, covered the 84 mile round trip in 6 hours and 40 minutes. The $\frac{3}{4}$ -ton truck carried 2200 pounds, while the larger one carried 3800 pounds. The expense of the round trip for both trucks was \$24.80, while the expense of haulage of these goods by freight, both ways, would have been \$41.40. All overhead, depreciation, interest, etc., was charged against the trucks.

MANUFACTURER - DEALER *Helps*

Curtis Pneumatic Machinery Co.

Our problem is a little bit different from the average accessory manufacturer's problem in this respect, in that, while we sell to the jobber and he, in turn, sells to his dealer, his dealer is at the same time the user or consumer, as our product is garage equipment, not something that the dealer again sells.

Counter cards, window displays and so on are, therefore, something which the dealer would not have any use for on our line.

We do, however, furnish to the dealers, a "FREE AIR sign, as per the reproduction, which he can display in front of his garage, proclaiming to his trade that he is in position to furnish "CURTIS AIR—FREE FROM OIL."

This air service is such an improvement over the ordinary free air line service in quality of air supplied, and the car owner is so well aware of this fact, by reason of our trade journal advertising, that the sign is really a business builder for the owner of the Curtis Compressor.

L. C. BLAKE.

Columbus Varnish Company

Our line of Peerless Automobile Specialties has been on the market for about 8 years, originally starting with one item—mohair top dressing. The line has been expanded until now it includes 28 items, each being the best we can turn out for use in its respective place. We have always maintained the highest standard of quality possible on this line of products and to compare favorably we put these goods in very attractively lithographed cans.



We furnish the window display illustrated to dealers carrying our line. This outfit consists of the following articles:

- 2 Cut-Outs 14 x 21 inches
- 4 Streamers 6 x 42 inches
- 2 Side Circular Streamers 10 x 60 inches.
- 1 Center Design 26 x 42 inches.



- 1 Sign Peerless Color Finishings 11 x 18 inches.
- 1 Wheel showing Colors.

Dealers can purchase practically everything needed for brightening and fixing up a car from a jobber and have all the goods in the uniform package, which keeps his stock neater and reduces his purchasing accounts. Our goods are sold by most of the large jobbers in the country.

S. W. HANNO, Vice-President.

Northwestern Chemical Co.

Norwesco displays are designed to do just one thing—to help the dealer sell more Norwesco Utilities. Each display holds a filled can of Se-ment-ol, the original self-acting radiator cement—Skalex, radiator cleaner—Norwesco mohair dressing and lining dye—Norwesco utility black, air drying enamel—Norwesco leather, Pantasote top and upholstery dressing—and Norwesco valve grinding compound.



The displays are lithographed in six colors. Behind the filled cans printed on the background is an actual reproduction of each can. In this way the goods are always displayed even after the filled cans are sold.

On both sides of the chemist figure in the circle a pocket is provided holding fifty 8-page folders, "Longer Life for Your Car." These folders thoroughly describe the Big Six Norwesco Utilities. The most natural thing in the world for the waiting customer to do is examine the different utilities. They are all removable. The descriptions are easily read and the prices are plainly marked on the literature that accompanies each display. The display is always there and always ready. The customer can sell himself about as easy as you can sell him.

In the window they are a real sales force—a force that not only attracts the passing motorist, but brings him into the store to buy. The combined effect of Norwesco counter sets and window displays gives a sales pulling power that should not be overlooked. They are silent salesmen and make the store the connecting link between the motorist and Norwesco products.

The readers of AMERICAN GARAGE AND AUTO DEALER can obtain these displays by writing The Northwestern Chemical Company, Marietta, Ohio.

C. H. THORP, Advertising Dep't.

Moore Transmission Gives More Ford Power Ranges

Several advantages are claimed for the Moore auxiliary transmission for Fords, which has been designed for use on Ford commercial cars and Ford truck attachments where more power is required. With the use of this device, it is possible to have an intermediate speed halfway between the regular Ford "high" and "low," an emergency low and reverse, said to be twice as powerful as the ordinary low and reverse, as well as a positive neutral that eliminates the drag of the clutch in cranking or starting the motor.

While the Moore transmission gives more power ranges there is no unusual strain on the original Ford parts because the flow of power is declared to be more constant and steady. The impulses of the motor are blended thoroughly before the power is applied to the back wheels. For this reason it is well suited for Fords hauling trailers or for converted Ford trucks or tractors. The

One Packard Efficiency Prize Won by Truck User in Chicago

Winners of \$1,000 awards in the National Truck Efficiency Test conducted by the Packard Motor Car Company are the What Cheer Chemical Company of Pawtucket, R. I.; H. F. Cherigo & Sons of Baltimore, and W. M. Hoyt Company of Chicago. Each of these firms was first in one of the three classes in the order named, class A representing 1½ and 2-ton trucks; class B 3 and 4-ton trucks, and class C, 5 and 6-tonners.

Second awards went to Edson, Moore & Co., Detroit; Salt Lake City Pressed Brick Co., Salt Lake City; and Gottfried Krueger Brewing Co., Newark, N. J.

Third awards were won by Edson, Moore & Co., Detroit; Harper & Wilz, Baltimore; H. F. Cherigo & Sons, Baltimore.

Substantial prizes amounting to \$5,025

One of the many remarkable things engendered by the test was the whole-hearted response of the drivers. Hundreds of them never before had kept records of any kind. Convinced that they could really help the armies overseas by better trucking here, they buckled to with a will and 95 per cent of all of those who started finished.

The judges were Harold P. Gould, editor of 100% Efficiency Magazine; H. W. Slau-son, M. E., of Leslie's Weekly, and Waldemar Kaempffert of Popular Science and McClure's.

Eccolene Is Tested by A. A. A. Contest Board

With the conservation of gasoline so necessary, even though the Fuel Administration abolished the "fuel-less Sunday" ruling, the Edward A. Cassidy Co. is greatly pleased at the showing made by Eccolene in a recent official test conducted under the supervision of the Contest Board of the American Automobile Association. After the conclusion of the test Chairman Richard Kennerdell of the Contest Board issued the following certificate of performance:

CONTEST BOARD of the AMERICAN AUTOMOBILE ASSOCIATION, 437 Fifth Avenue, New York.

R. Kennerdell, Chairman.

CERTIFICATE OF PERFORMANCE.

Certified Trial of "Eccolene" under the rules and approved supplementary regulations of the Contest Board of the American Automobile Association. October 1, 1918. Official Sanction No. 1106.

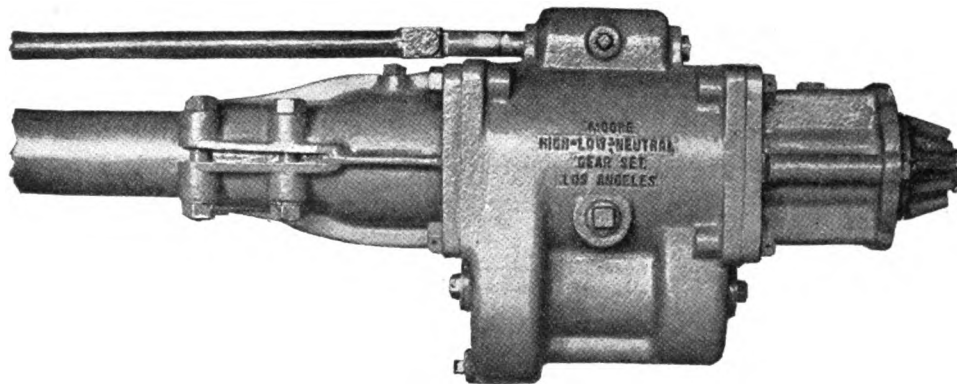
RESULT OF DYNAMOMETER TEST.

The trials in general showed an increase in horsepower and saving in fuel when "Eccolene" treated fuel was used as can be noted by the horsepower and fuel economy curves plotted from the data and complete detailed report on file in the office of the American Automobile Association and in the hands of the Edward A. Cassidy Company.

The test was started with a clean motor, the plain gasoline test being run first, after which the "Eccolene" treated test was run without attempting to remove any carbon which may have accumulated. On completion of the entire test the motor was examined and no carbon formation was found.

CONTEST BOARD, AMERICAN AUTOMOBILE ASSOCIATION,

(Signed) R. KENNERDELL,
October 16, 1918. Chairman



intermediate speed permits a car to be operated under load through sand or mud without holding the foot on the low speed pedal.

The Moore transmission is produced by the Tractor-Train Co., Los Angeles, Cal. The Eastern distributor is the C. S. Peets Co., 181 West 81st street, New York City.

Year-'Round Roads, Plea of Car Producing Firm

A plea for year-round roads is the subject of an editorial in the August-September issue of the Haynes Pioneer, a magazine published by the Haynes Automobile Co. The editorial, headed "We Need Better Roads," follows:

Today, more than ever before, we need good highways. With the railroads overburdened, the problems of the short hauls and the short business trips are forcing attention.

All roads are good roads in summer, and that is the period, too, when the railroads are best able to handle a surplus of freight and passengers. Year-round roads are needed—highways that will invite the use of trucks and utilitarian passenger cars and relieve the railroads.

were awarded to the winning drivers and seven dealers put up additional prizes aggregating \$3,625 for pilots making best records in their respective territories.

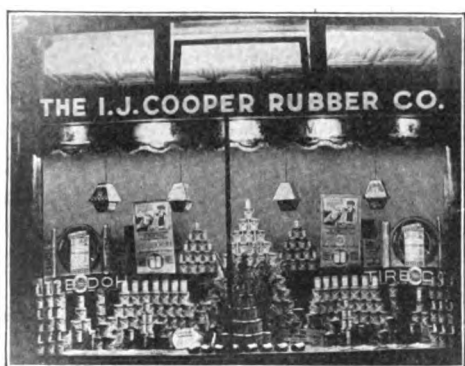
The purpose of the test was primarily to arouse practical response to the appeal for better trucking made by the Council of National Defense and the War Industries Board, and to demonstrate on the road methods of getting better results in motor truck transportation. The test served also to impress on owners and drivers the importance of keeping an accurate cost system, and resulted in a widespread adoption of the National Standard forms, as perfected by the Truck Owners Conference, Inc.

All and even more than was hoped for came from the test. Its slogan, "Save a Freight Car for Uncle Sam," was copied far and wide, even in France. There was a wonderful increase in efficiency in many particulars. Gasoline consumption was cut down, the return loads movement was given a powerful impetus, an increase was noted in the number of store door deliveries, good roads and rural expressing were encouraged, loading time and trip time were reduced, carriers were operated nearer capacity.

Another Prize Winning Window; Display Advice by Goodyear

The L. J. Cooper Rubber Co. at Cincinnati annexes one of our \$5 window prizes this month for getting up an attractive window display embracing TIRE-DOH and SPEE-DEE.

As in the case of the Cooper concern, if a firm will use a little originality and care, it is surprising what artistic and pleasing combinations may be obtained. And it pays to do so because the invariable result is that "classy-looking windows" capture business.



In this particular case, the window display of the Cooper organization helped to popularize TIRE-DOH and SPEE-DEE with its trade, besides giving the public the impression that it was an aggressive house.

Similar photographs are requested by the editors of the paper, from any garage, repair shop, accessory dealers and jobbers who have created some distinctive window display that has brought business. Five dollars will be gladly paid for each such published photograph.

The illustrations and descriptions of the four window displays of tires and accessories were furnished by the Goodyear Tire and Rubber Co. They are the same pictures and display plans that have been sent out to the big tire firm's

branch managers. While it may not be possible for all automotive merchants to use exactly the same plans the descriptions contain many good suggestions.

Description of Branch Tube Window Display No. 6343.

Cover the floor with orange crepe paper. Stretch a strip of black crepe paper from each front corner of the window to the rear and center of the window. Set up a cord tire at the intersection of the black strips of crepe paper.

Arrange the tubes on boxes, as illustrated in the attached photo. Mount the advertisement we are sending you on cardboard and prop it up in the center of the window as shown.

Set the palms and background in place. Lean the proper "Patriotic" cards against each palm and the display is complete.

This display should appear in the windows of your branch from September 17 to 28.

Branch Window Display No. 6359.

Using the same floor covering now in your window, place two big pneumatic cord truck tires as shown in the photograph, and group around them the tire saver kits and other accessories as illustrated.

There are six tire saver kits used in this display, but you may use less if it suits your stock better. Place the "Buy a Bond" card as shown.

This display will go in your window about October 3, remaining there until the 17th.

Description Branch Tire Saver Kit Window Display No. 6396.

The following accessories are necessary for this display:

- Four Tire Saver Kits
- A supply of Self Cure Tube Patches
- A supply of Repair Tape

- A supply of Tire Putty
- A supply of C-35 Cement
- A supply of Schrader Gauges
- A supply of Outside Protection Patches
- A supply of Rim Cut Patches
- A supply of French Talc

The display may be modified to conform to the size of your stock if it is limited.

First, make sure that the summer panel has been taken out of your background and replaced by an autumn panel. Cover the floor with black crepe paper. Lay out a cross, using two four-foot strips of orange crepe paper.

Lay out an open tire saver kit in the center of the cross as illustrated. At the extremities of the cross, arrange the self-cure patches, repair tape, tire putty and C-35 cement as shown.

At the left set up the outside protection and rim cut patches, and on the right arrange the French talc cans as illustrated in the photograph.

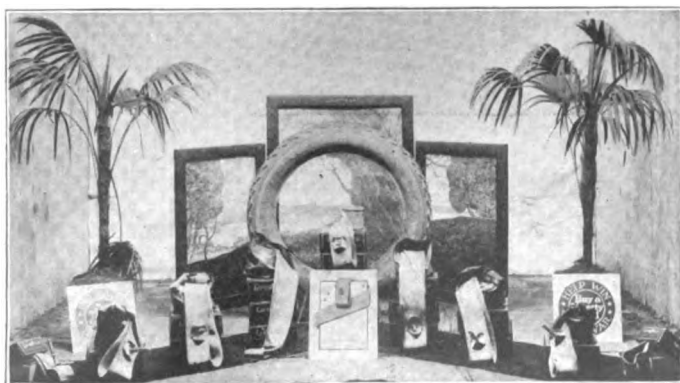
Now place the box of Schrader gauges and two tire saver kits in front of the window and the other tire saver kit on a tube box in the rear of the cross. Set up the tire saver kit card on the right and the "Buy Thrift Stamps" card in the rear as illustrated. Set the palms in place and the display is complete.

This display should appear in the windows of your branch from October 26 to November 2.

Description of Branch Accessories Window Display No. 6414.

The following materials are necessary for this display:

- One old tire showing blowout
- One old tire showing fabric break
- One old tire showing small cut
- Outside Protection Patches
- Rim Cut Patches
- Inside Tire Protectors
- Tire Putty
- C-35 Cement



Goodyear Display No. 6343



Goodyear Display No. 6359



Goodyear Display No. 6396



Goodyear Display No. 6414

Three special window cards
Three arrows
One special center panel for standard background.

The accessories, of course, will come from your own stock, but the old tires will have to be borrowed from one of your dealers if you do not happen to have them on hand at your branch. The special window cards, panel and arrows are being sent to you from Akron.

PROCEDURE.

First, cover the floor with orange crepe paper. From the rear and center of the window stretch a strip of black crepe paper to each front corner and another strip of black straight through the center. Insert the special panel in the background.

Arrange the three old tires as illustrated and group the proper accessories around each one of them as shown in the photograph. Tack the arrows to the tires as shown and be sure that they point to the defect in the tire. Set up the three special cards in their proper positions as shown.

Prop up the "Buy Thrift Stamps" card on one of the "inside protector" containers. Set the background and palms in position and the display is complete.

This display should occupy your windows from November 9 to November 23.

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.

White Has No Trucks to Sell; to Help Users of Other Kinds

A splendid example of patriotic unselfishness was furnished by The White Company, Cleveland, recently. This long established manufacturing concern announced that, while it would be busy for months to come making trucks for the American and French armies and so had no trucks to sell, it would put all the resources of its great organization at the service of users of ALL trucks, whether or not the vehicles were of White manufacture. The company's statement was as follows:

Motor trucks are an indispensable factor in the war-making energy of the nation. An armistice will not stop the countless thousands of them which are hauling war material from factory to camp and shipping wharf. War has multiplied highway transportation. Production must be maintained to meet the extraordinary demands of our Government and its allies for food, clothing and munitions. These industries depend for their life upon uninterrupted, efficient, expanding, truck service.

Commercial needs have outgrown facilities. There are not enough trucks to go round. Truck makers are still engaged in war production. The White Company's entire output of trucks is required to supply the American and French armies.

Though hostilities cease, the truck shortage will remain. This winter it will be acute. It may be difficult if not impossible to get new trucks. Existing installations must be maintained and improved to handle the enormous volume of business.

Truck owners and truck drivers must learn how to get the most out of their equipment, how to avoid unnecessary wear, how to load and unload, route, lubricate and inspect and keep in order, under intensive operation. It is a prime essential to "Keep the Truck Wheels Turning."

The White Company sees in this emergency an opportunity to be of service to

the nation and to individual truck users. While it has no trucks to offer at present, it has a motor transport experience as broad as American industry. It has not been devoting all these years to just making motor trucks. It has also been building transportation, in the sense of a right application of the truck to the haulage task, so that it will perform advantageously, operate continuously, use the least fuel and oil, conserve man power. The company's experience and organization which heretofore has been used to improve the transportation systems of White Truck owners, will now be placed at the disposal of all truck owners, large or small, whether operating White Trucks or equipment of other make.

It is the duty as well as the self interest of every truck user to make the most of his equipment. The men and women of this country have been saving and giving and working and fighting, to win the war. They have a right to expect that every tool useful in keeping up our industrial efficiency will be operated at its best. *Motor trucks are important tools.*

Until normal conditions return, all the resources and the experience of all White Company men in every part of the country, not now engaged in war work, will be devoted to one purpose: to "Keep the Truck Wheels Turning." Every representative is pledged to help perpetuate *Victory Transportation*.

The company proposes to distribute in convenient form every helpful hint available for the most effective use of trucks. The first little book, entitled "A War Message to Truck Users," is ready for distribution. It deals with the subject of Supervision, Lubrication and Inspection of large fleets of trucks, by a fleet chief.

Believing that this is no time for a narrow commercialism, The White Company offers its transportation advice to every truck user, of whatever make of truck, free of charge.

How to Make the Shop Pay

Cars Are Inspected Before Being Sent to Shop and Owners Required to Sign Repair Orders Before Work Is Started

By E. B. HINRICHSSEN.

The following forms will give a pretty good idea of the routine a job would follow when it came in. We will suppose that John Doe brought in his Buick car to see what was needed. He only knew that it was not doing well but had no idea as to what might be required. The preliminary tester would go out with him and make out the inspection sheet for his information. The following is a fair sample:

UNIVERSAL SERVICE COMPANY.

INSPECTION REPORT.

Date: June 12, 1916. Time: 9:55 a. m.

Name: John Doe.

Address: 1715 West Maple St.

Telephone: Maple 762.

Car: Buick. Number: 1342.

Front Bumper	O.K.
Headlights	O.K.
Radiator	Leaks
Front wheels	Out of line
Front axle	O.K.
Front tires	Fair
Hood	O.K.
Cowl or dash	O.K.
Windshield	Loose
Front doors	O.K.
Side lamps	O.K.
Rear doors	Left latch broken
Cushions	O.K.
Floor boards	O.K.
Carpets	O.K.
Running boards	O.K.
Rear fenders	O.K.
Top	Fair
Curtains	O.K.
Frame	O.K.
Body	O.K.
Tail light	O.K.
Rear springs	O.K.
Rear wheels	O.K.
Rear tires	Left one bad
Rear bumper	None
Steering system	Loose
Valves	Grind
Carburetor	Adjust
Magneto	O.K.
Connecting rod bearings	Loose
Main bearings	S
Wrist pins	S
Pistons	S
Rings	S
Cylinders	S
Crank case	O.K.
Oil pump	O.K.
Oil indicator	S
Flywheel	O.K.
Lighting and starting system	O.K.
Battery	S

Spark plugs	S
Wiring	S
Clutch	O.K.
Transmission	O.K.
Universal joints	O.K.
Drive shaft	O.K.
Differential	O.K.
Fuel tank	O.K.
Service brakes	Bad
Hand brakes	Fair
Misc:	

Signed: SAM SMITH.

This form was made out in duplicate. One copy was given to the car owner and the other was sent to Bill's office. The items marked "S" indicated that the inspector was unable to determine what might be required but advised inspection.

After the car owner had looked over this sheet he advised the inspector just what repairs he wanted done. The inspector would then write out the repair order form covering the items. If an estimate was asked, he would furnish it. This order was signed by the owner and was the formal order to proceed with the work. The following is a sample:

UNIVERSAL SERVICE COMPANY.

REPAIR ORDER.

Date: June 12, 1916. Time: 10:20 a. m.

Name: John Doe.

Address: 1715 West Maple St.

Telephone: Maple 762.

Car: Buick. Number: 1342.

Promised: 5:00 p. m., June 17, 1916.

Please do the following work on the above car for which work I agree to pay cash on delivery:

Repair radiator.....	Time and material
Line up front wheels	\$ 3.50
Tighten windshield .....	.75
Put new latch on left rear door....	4.50
Adjust steering system.....	5.00
Grind valves	10.00
Remove carbon	2.00
Adjust carburetor	No charge
Adjust connecting rod bearings....	12.50
Adjust both brakes	2.50
Inspect motor thoroughly and advise customer if any additional work is necessary	5.00
Inspect universal joints, transmission and differential and advise customer if any work or grease is necessary	5.00
Tighten all loose bolts, replace all missing grease cups and make any minor adjustments that may be required	10.00

Received by: Sam Smith.

Signed: JOHN DOE.

From this it will be seen that John Doe knows exactly what amount he will have to pay and what each item will cost. He also knows that there will be no extras unless he authorizes them. This form was made out in duplicate. One copy went to the billing clerk and the other to the customer.

When the billing clerk received the copy, he immediately made out the job form. This form was made with three copies. The first two were on ordinary thickness paper but of different colors, and the third was on thin cardboard. This form was an exact duplicate of the repair order form but with the prices left off. The first and second sheets, which were the selling and cost sheets, were retained by the billing clerk. The card board copy was slipped into a leather envelop with a transparent front and the envelop attached to the car.

These job forms were numbered consecutively and the number on the sheets was the job number. The clerk now made out the office job envelop which had on the outside only the job number, customer's name, address and telephone number, make of car and car number. Into this envelop was placed the selling and cost sheets and the copy of the original order and the inspection report. The envelop was then filed in the "work in progress" file for future reference.

The car with the shop copy attached was now sent to the shop. On its arrival, the foreman looked over the job and gave the time keeper the job number. The time keeper then made up an envelop similar to the one the billing clerk had made up and placed it in his files.

We will suppose that the job went to the motor department first. The radiator would first be removed and sent to the radiator department for repairs. As soon as the radiator was received in this department, the man who took it off would make out his time slip for this work. This would be the form:

TIME SLIP.

Clock No. / Name: John Davis. Job No. 768		
Time Started 10:30 A. M.	Work	
Time Quit 11:00 A. M.	Removing radiator and delivering to Radiator Department.	
Total hrs: 1/2	Rate: .40	Cost: .20

The time started and time quit were stamped by the time recorder and total hours filled in by the time keeper. The rate and cost were filled in by the billing clerk as soon as the time slip was received

in that department. Before sending the time slip to the billing clerk, the time keeper would enter the amount of time on his time sheet for clock number 7 in order that the amount of time turned in might be checked against the time clock record. When the time slip was received in the billing clerk's office, it would be placed in the job envelop for job number 768, which the billing clerk had made up before sending this particular job to the shop.

Time slips were made out for each detail of the work in order that the job might show clearly just how much time each operation required.

There were three classes of material requisitions. One was for parts obtained from the parts department, one for parts and supplies obtained from the shop stock room and one for outside purchases. We will suppose that the new door latch was drawn from the parts department. The following was the parts requisition form:

TO PARTS DEPARTMENT. P-4560				
Please deliver to shop:			Job Number 768	
No.	Part No.	Name.	Price Each	Ex.
1	B-621	Door Latch.	\$3.50	\$3.50
Signed: WM. JONES, Foreman. Rec'd by: John Davis.				

These requisitions, which were numbered consecutively, were made in three copies. The first was retained by the parts department to bill the shop from. The second was sent to the billing clerk and placed in the job envelop and the third went to the time keeper and was placed in his job envelop. When the billing clerk made up the bill for the job after it was completed, this gave a check on material.

The requisitions on the shop stock room was the same except that the numbers had an S prefix instead of a P prefix. The outside purchase orders were similar in form.

In the next issue we will carry this job through to completion.

Dearborn Truck Firm Buys Smith Good Will and Parts

Announcement is made by Advertising Manager B. E. Davis of the Dearborn Truck Company that the latter concern has recently purchased the good will and all materials of the Smith Motor Truck Corporation, Chicago. The supply of material and parts for Smith Form-a-truck attachments will be removed to the new Dearborn plant at 2515-2535 West 35th street, Chicago, where replacements for Smith trucks will be supplied.

The general offices of the Dearborn concern will be moved to 2015-2017 S. Michigan avenue, Chicago, where the street floor will be used as a showroom and the second

floor for the sales, accounting, purchasing and advertising departments.

The Dearborn has recently added to its line of truck units the Dearborn complete

worm-drive truck in two models—"F" 1½ ton and "H" 2½ ton capacity. Also the Dearborn complete chain-drive truck in two models—"A" 1 ton and "B" 2-ton capacity.

Master Trucks Used in Service of Indiana Motor Express Line

The "save-a-freight-car-for-Uncle-Sam" movement continues to grow throughout the country, the latest concern to inaugurate a motor freight and express service being the National Motor Freight & Express Co., with headquarters in East Chicago, Ind. This is an Indiana corporation capitalized at \$100,000, and its officers and stockholders are prominent business men.

It is the purpose of this new organization to operate a fast motor truck freight line from South Bend through Valparaiso and Gary and eventually to operate a network of similar lines throughout northwestern Indiana. The standard motor equipment of this service is the Chicago-built Master truck, seven of an order for twenty-five already being in service.

A schedule of rates and tariffs will be issued shortly and way-stations are being provided for at present. Freight and express shipments will be brought to these way-stations, where the through trucks will pick up and unload shipments. Rates will compare favorably with railroad tariffs. Although they will be slightly higher, the more rapid handling of shipments and the convenience will justify the additional charge. It often happens that freight shipments and express as well require from three days to two weeks or more to pass from shippers to consignees in this territory, even though the distance is comparatively short. With motor truck service shipments can be handled over the same distances in a few hours.

Commenting on the announcement of this latest addition to the ever-growing number of motor express companies, Eugene Goldman, vice-president and general manager of Master Trucks, Inc., said:

"The institution of motor express and freight lines throughout the country is a combination of patriotism and business. Materials and foodstuffs must be moved constantly if we are to win the war quickly. Already this is a severe strain on railroad facilities so far as war supplies are concerned, so that domestic shipments are neglected. Every time a motor truck is put into freight and express service one or more freight cars are released for the more essential long-haul work. Motor truck freight lines, however, are not a makeshift expedient to give temporary relief. I believe this mode of transportation has come to stay, the war having hastened this move, which is years ahead of its time so far as roads are concerned.

"Every one can remember that road-

building in this country took on its greatest activity after the automobile came, but much of the roads that were built for automobile traffic were not constructed to withstand the heavy pounding of motor trucks. The coming of motor truck freight lines, which right now are demonstrating their superiority over railroads, spells the beginning—after we win the war—of an era of highway construction of permanent character that will give America a road system within a few years that will be second to none in the world.

"The National Motor Freight & Express Co. will be among the pioneers of this new movement, and fortunately, in the section where it will operate, there is one of the best road systems of the country, which will enable it to make rapid deliveries of the heavy freight shipments originating in northwestern Indiana."

New Tire Repair Book Issued by Miller Firm

In line with the movement for conservation of pneumatic tires, the Miller Rubber Co., manufacturers of Miller geared-to-the-road tires, has just issued a new tire repair book. The text is expressly designed for the car owner. It treats largely with those repairs that can be made at home, but discourages the idea of the motorist attempting extensive repairs when crude workmanship is likely to ruin the tire.

"There are certain classes of repairs that can be efficiently accomplished only by expert repair men with extensive repairing equipment—equipment that the layman would never want around his private garage," reads the preface in the book.

Frequent as well as some unusual causes of tire trouble are discussed. Whenever it is feasible to do so, from the standpoint of economy for the tire user, a specific and practical remedy that has proven economical and serviceable is suggested.

"The information concerning tire repairs," says General Sales Manager F. C. Millhoff, "was obtained from actual experiences in the Miller tire department. There is no guesswork. No elaborate art has been introduced simply to attract the reader's attention. On the contrary, simplicity has been the keynote in the compilation of the work."

Many illustrations of actual instances of tire trouble are contained in the book, also a series of practical hints.

EDITORIAL REMARKS

Some Figures

Figures are fascinating things. It is amazing what stupendous structures and eye-opening explanations can be made by the use of figures. Floyd W. Parsons, writing on "Saving and Serving," in a recent publication, directs a regular spraying hose of facts and figures on the utilization of motor trucks in place of railroad locomotives and freight cars, and fairly swamps the reader who tries to carry out his argument to its logical conclusion. He wisely generalizes and leaves elaboration of details to the man with a big pad of paper and a hobby for "figuring."

Mr. Parsons says that more than 350,000,000 tons of freight are now hauled by motor vehicles over the highways of the United States every year. The cost of this hauling is estimated at 23 cents per ton per mile, and since the average haul is 8 miles it is apparent to the man with a pencil and a knowledge of the multiplication table that this American bill for transportation by motor over the public roads is \$644,000,000 a year. The wonderful growth in motor transportation leads many to predict that the bulk of freight to be carried not over 100 miles will soon be handled by that method.

The lover of statistics then figures that it takes 300,000 tons of steel to construct 200,000 motor trucks. These 200,000 trucks will have a carrying capacity equal to 1,250 railroad locomotives and 50,000 steel freight cars, *but*, in such case the use of the trucks instead of railroad engines and cars would mean a saving of more than 1,000,000 tons of steel.

Add to that tidy saving the enormous amount of coal saved, that the railroad equipment would require, and you have another row of figures to stagger the imagination. Of course it takes gasoline to run motor trucks but, compared to the wasteful use of coal by railroads, the motor consumption of "gas" is small indeed—that is, to accomplish the same work.

If doesn't require a remarkably clever fortune teller to see that the motor freight service is bound to cut heavily into the railroad hauling for short distances. As conducted by the government the railroad business is becoming unpopular. As a war measure government operation might have been the short cut to get the job done. Of course, fairness demands the statement that if private operation had been clothed with the same autocratic powers that Mr. McAdoo assumed, no doubt the railroads would have been run just as efficiently under the old regime—and far less expensively. Railroad wages have been boosted sky high and the railroad employe votes thereby "made safe for the democrats." Somebody will have to pay for it all and the bill will eventually be presented to the public. "Mr. Jones, he pays the freight."

Without the slightest desire to heave any rocks at government operation, it seems to us that shippers who get weary of railroad prices and railroad delays will turn for relief to the motor truck lines. They will get the bulk

of the short haul business. Mr. McAdoo may try to side-track this competition in some way, but it will be without success. If we had the choice between buying an interest in a motor truck freight enterprise or in a government-operated railroad, there wouldn't be much hesitation in making the selection.

The Aircraft Report

Many business men, especially those with any knowledge of manufacturing, have congratulated themselves that their votes were not enough to elect the author of the Hughes aircraft report as the official occupant of the White House. The document seems better fitted for presentation to the head of that party so often characterized by pictures of a loud voiced animal rather than being hailed as the results of serious, intelligent labor on the part of one who essayed to lead the hosts of the other party whose emblem is the sane, solid and sensible elephant. The marvel is that such a busy investigator could have found so little of which he approved. It appears to be the opinion among automobile men that Colonels Vincent and Deeds are victims of their own zeal to get things done, even though they were constantly hampered by red tape and the ignorance of practical manufacturing which some of the officials at Washington appear to deem a mark of distinction.

Trucks Essential; Why Not Good Roads

With long trains of army trucks and an ever increasing flow of commercial automobiles attesting the important part which the motor truck must play in beating Germany, is it not time for the national Government to take more decided steps than it has to encourage improvement of the highways? says the *Public Ledger* of Philadelphia.

With railroad facilities, particularly in the war-industrial zone in which Philadelphia is located, inadequate as they are to meet the demands of both war and civilian commerce, the part which the motor truck must play in keeping the war work and essential industries going cannot be over-estimated.

No one who has watched a motor truck lunging slowly and fearfully along a billowy or gutted road can doubt that poor roads may impair the efficiency of the truck 50 per cent or more.

If it has been considered worth while to declare the manufacture of trucks for military and vital civilian needs an essential, it would be foolish not to carry the effort to its logical conclusion. The waste of truck efficiency, through poor roads is little short of tragic with the country in the crisis it faces today.

Here and there, where Government traffic is particularly heavy, there is to be noted a more or less gratifying improvement of road conditions. But the improvement is not general. It should be.

The tax on individual communities for keeping their sections of the highways in good shape would be comparatively light, and certainly there is enough patriotism

in every community in this country to make the necessary sacrifice and effort if the seriousness of the situation were properly laid before them, backed by tactful Government encouragement. In addition, highway repair work should be strictly maintained as an essential, and the full facilities of the Government's labor control should be constantly available to the executives in charge of such work.

Lamar, Colo., October 21, 1918.

American Garage & Auto Dealer,
Chicago, Ill.

Gentlemen:

I am in receipt of your nice letter of the 17th. Words cannot express my appreciation for the check which you enclosed to me, and I wish you to do me the favor of thanking the judges for the compliment that they bestowed upon me.

I assure you that I consider it quite an honor and will always try in my humble way to help make **THE AMERICAN GARAGE & AUTO DEALER** the leading publication of the automotive world.

I presume that you will run Penlings from the Pen of Dike in the next issue and therefore will await sending any more this month. If you can use some next month will try my best to please you and assuring you that I consider it a privilege.

Again allow me to thank you and with best wishes I remain

Your friend,
(Signed) C. H. WOODEN.
"Dike."

Oak Park, Ill., October 18, 1918.

The American Garage & Auto Dealer,
Chicago, Ill.

Gentlemen:

In your October number I came across our good fortune in winning the third prize and I thank you very much.

I am enclosing my idea in regard to increasing our sales of merchandise.

I have written letters, sent circulars, and window displays, and even advertised, but nothing has been quite as effective as this catalog. I put one in every letter that is mailed, hand one to every one that comes into the place, and mail to those that are on my mailing list, and I keep two boys the year around to put them in cars that stand at business houses, shows, etc.

Instead of having \$500.00 worth of stock on hand, as we formerly did, it now runs into many thousands of dollars, and so motorists often hear the remark such as this: "We haven't got it; the only place you can get it is at BODÉ'S; if they don't have it, nobody out here has."

Every garage man should make a complete catalog of the things he is selling. I hope every one will, and if I have the good luck to be able through your paper to put the idea into their heads I will say that this will be my banner piece of advertisement. Helping others paves the road for one's self.

Thanking you very kindly, I am

Yours very truly,
BODÉ AUTO STATION.
(Signed) Per Emily Bradley Bodé.

Peoria, Ill., October 21, 1918.

American Garage & Auto Dealer,
Chicago, Ill.

Gentlemen:

It was indeed an agreeable surprise to receive your letter of the 19th enclosing check for \$25.00.

We have been subscribers to your splendid publication for a number of years and every issue is thoroughly and completely digested by the various members of the firm and we have oftentimes found helpful hints and articles for the more efficient handling of certain work and departments.

In this particular instance the writer had no particular idea of competing for a prize, but merely submitted the copy for the reason that it was one of the most remarkable result-producing pieces of copy we have issued, for it really was the cornerstone to the extensive business we are doing today.

We will eagerly await copy of your October issue and wish to say that we are proud of the valuable publicity we are bound to receive from its publication in your splendid medium.

We are enclosing herewith check covering extension of our subscription for one year. Thanking you again, we are

Yours very truly,
CROWN AUTO COMPANY.
(Signed) R. N. Moutier,
Manager Sales and Publicity.

FUNDAMENTAL SALESMANSHIP NEEDS.

A green salesman can sell goods sometimes—a "blue" salesman, never, George W. Hopkins, advertising manager of the Columbia Graphophone Co., New York, told members of the Junior Advertising Conference at the San Francisco Convention. Optimism, he said, was the foundation for enthusiasm in selling.

The average merchant, he said, buys discounts rather than looking upon the goods as an opportunity to resell at a profit, and the wise salesman is the man who shows the dealer he is offering to sell the merchant profits, rather than mere merchandise.

A good salesman who leaves a store without having sold a bill of goods, he said, will stop and review what happened. The merchant said this, etc. Such a review will usually show a salesman what he might have said that would have closed the order and he will try this argument first in the next store he enters.

"No" is the first word of the buyer, Mr. Hopkins said. The salesman needs to get a pencil into the hands of the buyer and make him a part of the demonstration—make him a part of the selling operation. Mr. Hopkins suggested that the salesmen should avoid technicalities and that, first of all, the successful salesman must "sell himself" to the prospect.

What Part of the TURKEY DO YOU WANT?

Thanksgiving Day, from early history, has been a day of general blessing in the United States, and at that time millions of people gather round the table to partake of all that is good to eat. In this manner, as well as by prayerful observance, Americans manifest their appreciation that they are residents of this great and glorious United States.

The usual question which the host asks that day, when it comes your turn, is: "WHAT PART OF THE TURKEY DO YOU WANT?" And how well that question may be applied to your business.

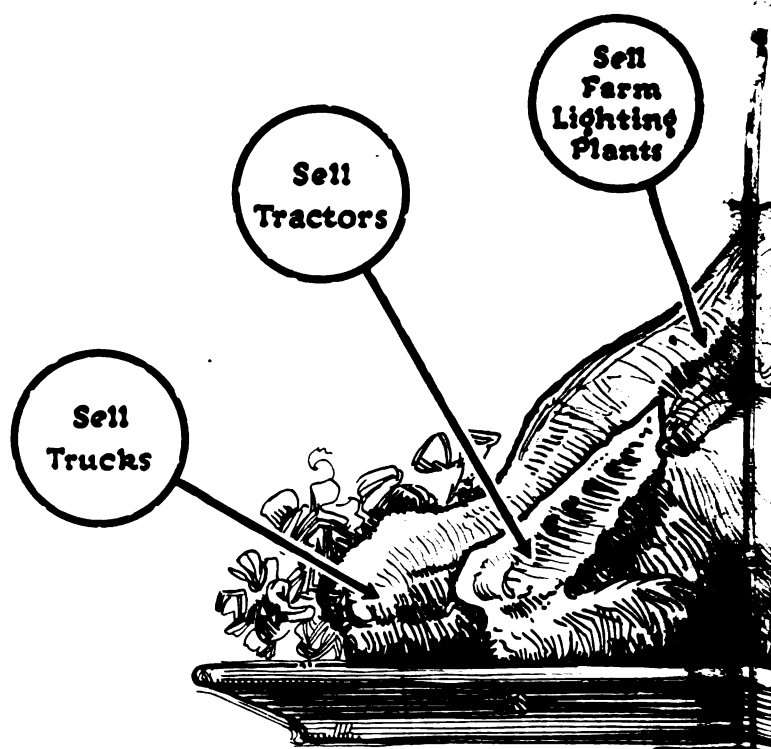
Consider that the turkey represents the character of YOUR business. *Does it look starved?* Or has it become fattened? *Is it profitable* (or good eating) or is it unprofitable (or tough)? What kind of dressing has it? Or, in other words, is the interior of your garage, repair shop, or automotive agency up to date, up and going, smacking of prosperity—of hustle, and of system?

Whether or not your guests, *your customers*, if you are the host, "come back" for more turkey or decide to patronize you again is UP TO YOU and depends on the hospitality of your service.

Every part of *this TURKEY* (meaning your business) is good. Starting right in to carve it—if the neck comes first, take it because it represents TRUCKS. Just because you have never sold trucks is no reason why you should not—possibly you are the very one in your territory who can make the most of your opportunities.

In smaller cities especially the prospects for truck sales are very numerous. These include farmers who come first because they are more numerous, then the small-town firms, which comprise coal, contracting, lumber, express, creameries, telephone companies, oil, brick, bottling works, grocery stores, manufacturers, police and fire departments, etc., etc. Names of these, if unknown to you, can be acquired through local telephone and city directories, from newspapers as well as from license lists.

The "wing" of the TURKEY is also *delicious* eating, because that represents a TRACTOR agency. And here also can the small town dealer and garageman make a BIG cleanup because he has the essential mechanical experience to stage an effective tractor demonstration. Moreover, the farmers will favor you with their tractor business (if you solicit them) because they have the confidence, through previous dealings with you, that you know what style and kind of tractor is most appropriate and you are best fitted to give proper service to users. By selling TRACTORS to the farmers you "centralize"

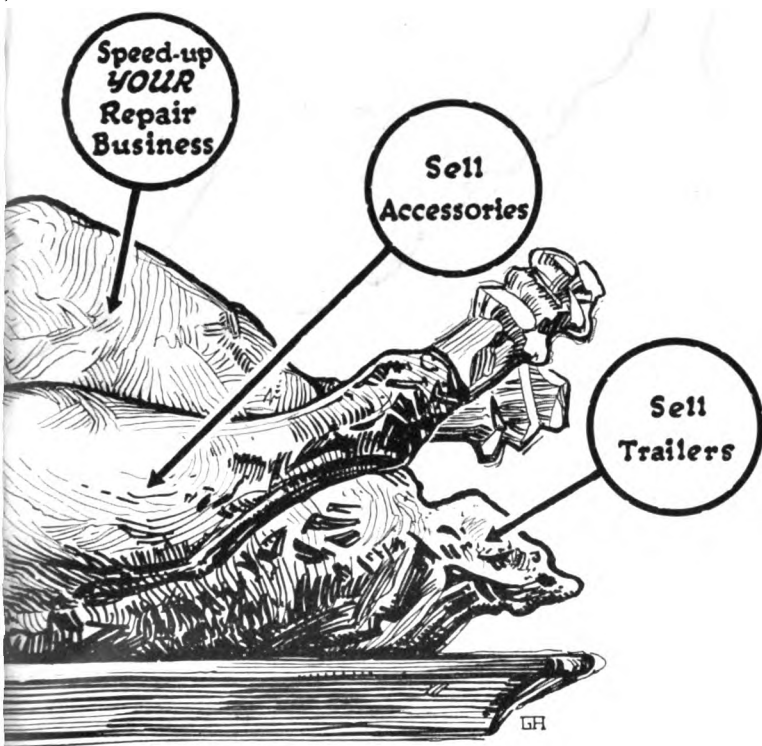


your place of business, as it is logical the farmers will first visit you when they come in at the week-end to purchase their oil, gasoline and accessories.

The scarcity of help, as well as horses, has made the tractor the legitimate investment for owners of farms of certain size, which of course embrace those who are prosperous, up-to-date, substantial crop producers, *or who desire to become such.* There's good money in selling TRACTORS, and you are the logical fellow to do it—so hop to it at once—if you want any advice about TRACTORS—write to the editors of the AMERICAN GARAGE & AUTO DEALER. (Don't turn down the wing—it's good).

If you are now selling TRUCKS and TRACTORS, and you are asked for an opinion as to what part of the TURKEY you prefer—take a slice of the breast, which stands for POWER and LIGHT PLANTS. This proposition fits in well with TRACTORS because both are needed by farmers and you will speedily find that POWER and LIGHT PLANTS help to make up the deficit you may have encountered when your new passenger car sales stopped.

Turkey o YOU Want?



Recent investigations conducted by our editors show that there is a wide-spread favor in rural communities for POWER and LIGHT PLANTS. Cash in on your acquaintance with the farmer and show him why a POWER and LIGHT PLANT will save, as well as make money for him. In a nutshell, electric plants will give you a closer grip on the farmers, they provide you with additional profits, when perhaps you may need them—and last but not least they stamp you as the most aggressive and up-to-date garageman and dealer in YOUR territory.

But as the dinner is progressing, and it is possible that you have an appetite for more—don't overlook the choiceness of other parts of the turkey. For inasmuch as the breast in a "fattened" turkey (or prosperous garage) is usually large—there's a portion which says—"Speed up YOUR Repair Business."

Even though you are busily occupied now in doing a substantial repair business, if you will systematize your work and labor so as to do more business, YOU CAN THEN DO MORE BUSINESS!

The repair business has proved a friend indeed for

both the garagemen and dealer—perhaps more so for the latter because hitherto some dealers have exclusively sold cars—and consequently let the repair side of their business slide.

Start right at the top and "lop off" useless expenditures; weed out your inefficient help—or rearrange it to increase efficiency. Put your work on a time basis—stick to the schedule—and then be prepared to go after more repair jobs so as to keep the shop "humping all the time." Sell your repair business precisely as you would exploit or advertise trucks, tractors, and farm lighting plants. WORK A LIST OF PROSPECTS! Advertise in YOUR newspapers—write letters—send circulars—and if necessary, make personal calls or use the telephone!

Many people clamor for the turkey leg, which in this case typifies ACCESSORIES and herein exists splendid business opportunities also for the dealer and garageman. Every passenger car, truck, and tractor owner is "fertile ground" for the sale of accessories, which sales are easy to make and are profitable. But before you can hope to sell accessories on an elaborate scale, you must "dress up" your garage or place of business, and this means the interior, as well as exterior.

Utilize your window facilities to the fullest extent. Show-cases help to make an appropriate background for the display and presentation of accessories. If you haven't any show-cases—install some. Acquire the habit of selling seasonable accessories. Anticipate the wants and requirements of your trade. *Accessories in themselves represent a big feast for you.*

Mr. Dealer and Garageman—if you are wise, you will also look into the possibilities of the TRAILER, which affords you a substantial business substitute for the passenger car business you may have lost.

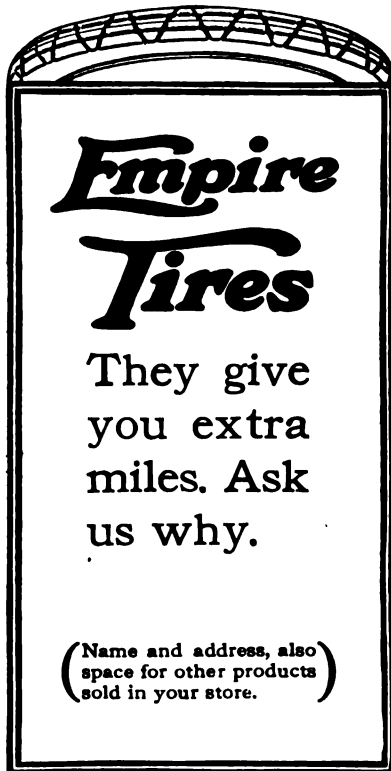
TRAILERS are being used in every line of business, and they are very popular in smaller cities. You will find your trade in a receptive frame of mind for a TRAILER solicitation, as the TRAILER assists the farmer to carry "more" produce to the market, which brings added profits. The TRAILER will equally appeal to the small town business man or merchant, as it makes for increased hauling efficiency, and all around economy.

TO SUMMARIZE: IF YOU WILL SELL TRUCKS, TRACTORS, FARM LIGHTING PLANTS, ACCESSORIES, TRAILERS, AND "SPEED UP" YOUR REPAIR BUSINESS, YOU DO NOT NEED TO WORRY ABOUT "TOMORROW."

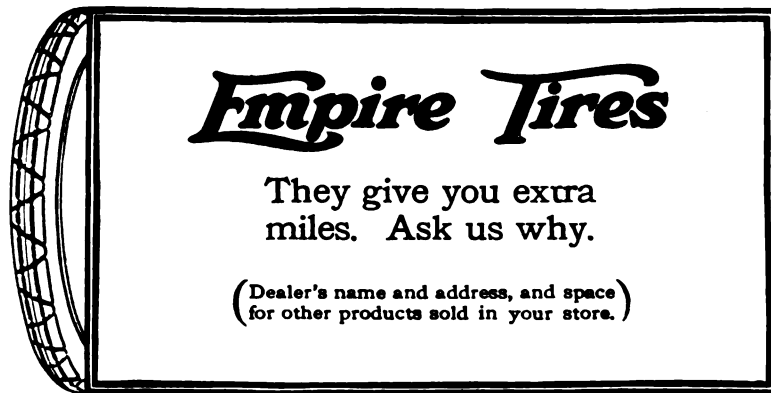


Small Cuts for Empire Agents to Use in War-Time Advertising

In order that its dealers and agents may be prepared to keep their names before the newspaper readers of their cities and towns the Empire Rubber & Tire Co., Trenton,



Single Column Electrottype



Double Column Electrottype

N. J., has obtained a supply of single and double column electrotypes. The cuts, while featuring Empire tires, have spaces in which the dealer may have his name and business address as well as other products sold in his establishment.

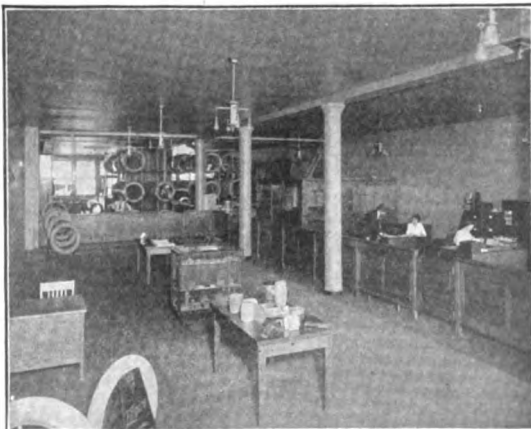
The company styles the single column cut No. 17 and the double column electrottype is No. 16. In a recent number of the firm's house organ, *The Empire Tire Dealer*, this cut service is thus described under the title of "War-time Advertising Calls for Small-space Electros":

"In response to requests received from a number of Empire dealers, for small space newspaper electros, we have prepared a

supply of each of the two electros reproduced on this page.

"The dealers that have requested these electros have all been regular users of big space in their local newspapers, and while the present war conditions do not justify them in continuing on the old space schedule, at the same time they realize the necessity of keeping their names, as the local Empire dealers, continuously in the public mind and more particularly in the minds of all motorists. So the dealers are using these two small electros in their local newspapers.

"We will be very glad to send a duplicate cut of Electro No. 16 or No. 17, or dupli-



Showroom and Supply Department



Office of Toledo Branch

cates of both, to any Empire dealer who wants to use small space in his local newspaper, rather than take a chance on his name dropping entirely out of sight in his local automobile world—for in this line, as in practically all other lines, out of sight means, out of mind, and out of mind means out of sales.”

In the same issue of *The Empire Tire Dealer* attention is called to the fine equipment of the firm's Toledo branch, which is in charge of G. H. Wood. The article about the Toledo branch was illustrated by the three pictures reproduced here. In the description of the branch emphasis was laid on the fact that advantage is always taken of the two big windows to arrange displays of Empire casings and tubes.

Amazon Firm Has New Cord Supertire

A new, massive cord tire has just been announced by the Amazon Rubber Co. of Akron, Ohio, which will be called the "Amazon Cord Supertire." Of multiple ply construction, each cord is separated from the others by an insulation of rubber—each cord performs its functions independently, friction and consequent heat are impossibilities.

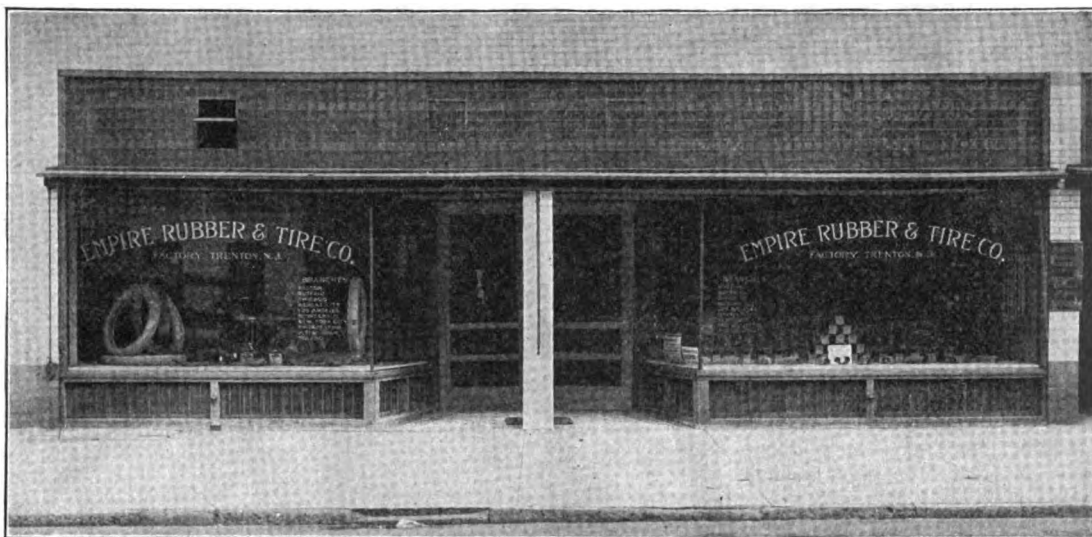
Almost three-quarters of an inch of sturdy sidewall above the bead makes it mechanically impossible for rim cuts to occur. The new cord has a jet-black, ebony tread with a broad pearl-grey sidewall, and at present is being made in the following sizes: 34x4½, 36x4½, 35x5, 37x5, 36x6.

Red Cross Drivers Are Trained at Greer College

Activities of the Red Cross Motor Corps will be continued regardless of the war situation. This branch will remain in service two years after the cessation of hostilities.

Officials of the Greer College of Automobile, Tractor and Aeroplane Engineering announce that their institution has been made the Chicago official training school of the American Red Cross Motor Corps.

The November class has just begun with an enrollment of twenty-five women, all of whom will take a short intensified course in automobile theory and practical mechanics. Those passing the final examination will be assigned ambulances here and a great many will be assigned to the overseas division and will go to France and Italy.



Toledo Branch of Empire Rubber & Tire Co.

Garden City Spring Works Has Fine "Sunlight" Plant

The Garden City Spring Works, 2300 Archer avenue, Chicago, is one of the pioneer spring-making concerns, having been established since the year of 1872, or for nearly half a century. In the early days when the firm first started, it established its headquarters in State street, where it remained 12 years, thence removing near the old Fairbanks factory.

the time that they have operated, and at present its springs are being used by numerous manufacturers, garages and service stations.

A substantial local spring repair business has also resulted this year, so that right now the Garden City Spring Works folks say: "Business was never better." Inquiries from automotive merchants for springs and spring service are always welcomed.



Plant of Garden City Spring Works

The firm has occupied the present building, which is thoroughly modern and fire-proof, since 1913, and as will be noted in the illustration, metal reinforced "sunlight" windows are used, providing ample light for every nook and corner of the factory.

"Good automobile springs" has always been the motto of the Garden City Spring Works, and no work is allowed to be turned out unless it is carefully inspected as to workmanship and materials.

Garden City springs were first furnished for buggies and other horse-drawn vehicles, and when the automobile blossomed forth the factory started to make springs for the Haynes-Apperson, and later for the Rambler and Jeffery.

It is regarded as quite natural that the business of the Garden City Spring Works has expanded to national proportions, in

Saxon Dealer Takes On Airplane Line

The time is not far distant when we shall see our land dotted with buildings bearing a sign as follows: "Garage and Hangar—Motor Car and Airplane Repairs." In fact, already one retail motor car firm has taken on an airplane line, and while sales of the sky-cars are slow, the agency has been profitable as an attraction and advertisement for the motor cars.

The Summit Motor Car Co., Saxon dealers at Seattle, Wash., not only deal in Saxon sixes but it is prepared to sell an Angelus airplane to any individual who has had all the thrills of fast travel on the ground and now wishes to do his touring above the housetops.

Welding, Cutting and Brazing

Repairing Scored Automobile Cylinders

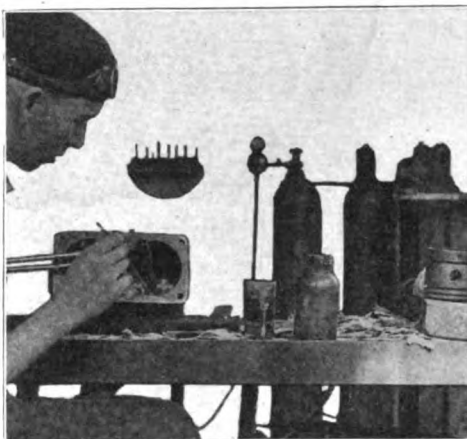
By DAVID BAXTER.

The average oxy-acetylene welder passes up a scored automotive engine cylinder as a bad job. And it is a difficult piece of work to do right, not only because of the difficulty encountered in the actual welding but because most of the repair welding shops are not equipped to finish the job after it has been welded. Most of them have no lathe or boring attachment for finishing this class of work. And it is a slow, costly process to remove the excess metal left by the welding process with files, chisels, or grinders. It is impossible to weld a score without leaving a rough, uneven surface along the seam of the weld. Even where there is plenty of room to work, the inside of an automotive engine cylinder is pretty close quarters in which to weld. This lack of room also impedes the removal of the excess metal.

However, there is now a method of repairing scored cylinders which is coming into general use all over the country. The welder may easily take up this work because the welding shop is particularly adapted to it, although it is not necessary to own a welding plant in order to be in a position to do the work. Almost any

the cylinder. Now I do not mean that all you have to do is to smear the solder along the score, then scrape off the rough edges. It requires some skill and a little practice to do a good job.

Conditions and workmen vary in different shops, but the following instructions, together with the accompanying pictures should furnish at least a good working idea of how silver solder may be used to repair scored automotive cylinders. No



Manipulating Torch and Trowel

doubt each welder will be able to adapt the instruction to his own shop conditions.

The silver solder process is recommended especially for hurry-up jobs. I may as well say here that it is not always entirely reliable, not so much so as the welded job. But it may be successfully accomplished and is being used in many localities. A great deal depends on the way the work is done; it is sometimes hard to tell just how well the soldering has been done because the welder may only judge by appearances. At the same time I know of jobs that have been giving good service in months of running. So, if the solder is made to stick right I think the customer will get his money's worth, especially if he must keep his car in service without long delays.

First let us list and describe the tools needed for silver soldering scored cylinders.

Picture No. 1 shows the job, and the tools employed by one welder. On top of the cylinders in the left side of the picture will be seen a cylindrical object with a sort of handle protruding from one end and having ratchet notches in the ring of the other end. This we will call a hand borer—for reboring the cylinder after the score has been soldered. It is well to have several sizes of these hand borers to fit Ford cylinders or other standard cars. This one was made from an old piston sawed off near the bottom. Or the welder may have one made of ring stock

in most any machine shop. The handle is tapered at the outer end to fit a common brace.

The next and perhaps the most important tool is the soldering iron. This is of special design resembling a sort of trowel or small shovel. The soldering iron is shown in the center of picture No. 1, leaning against the upright cylinders. It is made by bending a piece of $\frac{3}{8}$ in. thick by two square copper, to fit the inside of the average cylinder, then welding it to a $\frac{3}{16}$ rod about 18 in. long. Weld this rod to the inside curve of the piece of copper. Then grind the edge of the copper to almost a sharp edge. The outside curve of the piece of copper should be ground or filed smooth. The measurements given may be changed to suit conditions.

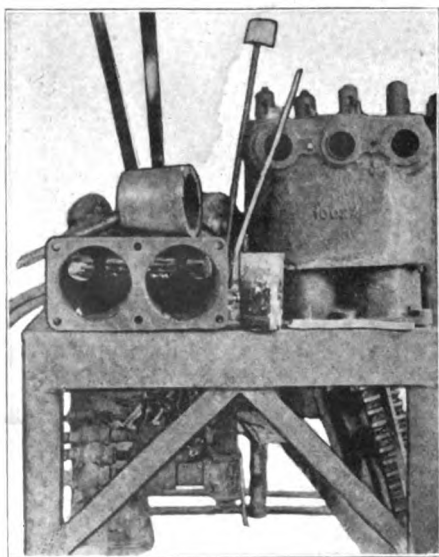
Standing beside the soldering trowel is a stick of solder. Notice how long and thin it is. It is very unhandy to solder inside of an automotive cylinder with the usual thick bar of solder. So we must have a longer, thinner bar. To obtain this it is only necessary to melt part of a bar in a babbit ladle and pour it in a long notch cut in a soft pine board or in a groove cut in a smooth level place in the earth. The solder stick should be about the size of the usual aluminum filler rod.

Next in importance is the acid or tinning solution. This is represented in the picture by the glass jar in the centre. This solution is composed of equal parts of sal-ammoniac and blue vitriol dissolved in the same quantity of muriatic acid. After the chemicals are dissolved together the acid is ready for use. Do not mix them in anything but glass or earthenware containers. Make only a small quantity at one time; a little more than is needed for one job.

Next on the list of tools is the welding torch or other burner for heating the soldering trowel. The trowel must be heated the same as for a job of common soldering. With the articles named above on hand the welder is ready for repairing scored cylinders.

The first step in the process is to clean thoroughly the scored place and the adjoining surface of the bore for a space an inch or so wide each side of the score. Clean the full length of the damaged place. This is readily done with metal wool or emery cloth after being sure the cylinder is dry inside. Wipe out the entire inside of the cylinder to prevent any oil or moisture from dripping or running down onto the score when the soldering starts.

Now place the cylinder over a gas or oil burner on the welding table. Heat the cylinder until it is very warm, not too hot, just hot enough to cause the tinning solution to fry a little. The solution is applied as soon as the cylinder is hot; it may be



The Job and the Tools

one with some mechanical ability can repair his own scored cylinders after he has purchased a few simple tools.

This process is now called silver-soldering, perhaps for want of a more appropriate name. It consists in a word of filling the scored place with hard or silver solder; and afterward removing any surplus solder that may cling to the inside of

applied with a brush or paddle. Be sure it is applied all along the scored place.

The soldering iron (our soldering trowel) should be ready to use directly after the acid is applied to the score. The soldering trowel should be just hot enough to melt the solder. Don't get it hot enough to cause the solder to be wild. In the welding shop the trowel is easiest heated with the welding torch. And it may be quickly reheated in case it becomes too cold before the job is finished. Merely pass the flame back and forth across the back of the trowel a few times.

As soon as the acid has been applied and the trowel is hot, apply the trowel to the

solder that may be clinging to the inside of the cylinder. Then after a little polishing with cloth or other suitable material the job is ready to go back in service.

The solder used on the above described job has been recommended to me as nothing more or less than common hard solder.

I would suggest, however, that the beginner should buy the kind that is stamped silver solder. Then let him be as careful as possible when doing the work, especially at the inside end of the score. Once this end of the solder starts to peel while in service it may cause some grief.

Replacement Part Makers Need Materials in War Time

Duty of Keeping Used Vehicles Running by Making Repair Products a Hard One

By Geo. L. Pederson.

Higgins Spring & Axle Co.

Action of the War Industries Board regarding iron and steel products will reflect itself in a great reduction on new motor-driven vehicles and has already reflected itself with reference to manufacturers producing accessory parts. The reduction of new motor-driven vehicles will throw a greater burden on to present used motor-driven vehicles, which will reflect itself in a greater demand for replacements, in order to keep up present used cars one hundred per cent as to efficiency.

Motor-driven vehicles have proven themselves to be an important factor in the prosecution of the present war. They saved Paris in 1914 at the Battle of the Marne. In this country motor-driven vehicles are used in different ways, especially in the rural communities. The farmer could not dispense with this mode of transportation for the reason that he needs it in transporting his produce to marketing places and in turn taking back essential materials in order to keep up his farm one hundred per cent in producing foods.

Likewise, in cities, motor-driven vehicles are used directly and indirectly in the prosecution of the war. They are being used in the way of transporting goods from city to city, from freight depots to factories and from factories to freight depots. Their requirements are so numerous it would be hard to cover the different avenues that they could be used in, directly or indirectly, in helping the government, and there is hardly a place where they could be dispensed with, without resulting in the retarding of the mobilizing of our war strength.

One important industry that has been affected is the spring replacement manufacturers. We all realize that springs to a car are almost as important as a gun carriage. If spring replacement manufacturers do not receive sufficient supply of spring steel in order to make spring replacements, it would greatly reduce the present use of used cars on account of not having springs to take the place of

those that are broken, due to the excessive use that these already used cars are being put to.

In order that all manufacturers of accessory parts may receive sufficient materials to manufacture such parts and in order that they may be judiciously distributed by the manufacturer to the jobber and the jobber in turn to the dealer, the classifying or licensing of present used cars will greatly facilitate matters, giving the War Industries Board sufficient information in order to give those manufacturers sufficient material—especially steel—so they can furnish parts for those cars that are essential. The classifying or licensing of cars should be done according to their usefulness or essentialness. Those cars that are required more in certain avenues of trade than others should be given preference in lieu of those that are less essential.

We do not know whether the War Industries Board has thought of this matter or not, but we believe this would be opportune to have this subject brought up to lessen any possibility of a scarcity of accessory parts. As we feel sooner or later that this will have to be done, by action now it will eliminate any slowing up of the automotive mode of transportation, especially as we go into the fall there will be a greater demand for this class of vehicles than ever before.

At the present time we are affected by the scarcity of materials, and if some relief is not given to us immediately, our supply of springs for essential motor-driven vehicles will be practically cut off. We believe if the automotive industrial world will take hold of this situation, which has reference to present used cars, they will accomplish a whole lot by having cars classified or licensed as to their essentialness.

We all realize that the importance of these vehicles has been lessened by being erroneously advertised as "pleasure" cars and the impression that has been gained by advertising them as such should be corrected by setting forth the importance of motor-driven vehicles in the prosecution of the present war.



Reboring Soldered Cylinder

end of the stick of solder after first placing the end of it in the score. Melt the solder into the tiny ditch caused by the scoring. With the edge of the trowel work the melting solder along this ditch, rubbing it in good as you go along.

Start at the back end of the cylinder and work outward or at the open end and work inward. Fill the entire score with solder. Allow the solder to set, then reheat the trowel and work it back and forth or sidewise endeavoring to make a smooth surface. After some practice the welder should be able to do a job almost fit for service without having to employ the reborer. Those having had experience in common soldering will find the process easy to learn.

Picture No. 2 illustrates the manipulation of the torch and trowel.

Picture No. 3 shows how the reborer is used. Fit the ratcheted end into the cylinder and turn it around with the brace until the entire depth of the cylinder is reached. This will cut away any surplus

Mechanical and Engineering Problems

Drive Ratio Meaning

Question—What is the usual drive ratio on automobiles? I hear that one is three and one-half to one and another three to one and so forth. I also hear that a car is in direct drive on high speed. What does this mean? What bearing has it on the various drive ratios mentioned? What does it all mean anyway?

C. J. —, Mich.

Answer—Gear or drive ratios, as you call them, are the ratios between the drive pinion and the ring gear in the rear axle. These ratios vary according to the type of car. Everything about the car determines what the ratio shall be. The engineers take all points into consideration in figuring it. It may be as high as two and one-half to one and it may be as low as four and one-half to one. It all depends on the size and type of the engine, the weight of the car and a hundred other points. This ratio is fixed and is not varied as a rule. Some manufacturers have tried two different ratios arranged so that either can be used, but it has not become popular.

A car being in direct drive on high means that the driving mechanism is traveling at engine speed as far as the ring gear in the rear axle and has nothing to do with the reduction in the rear axle. It is purely a transmission matter.

* *

Loose Pistons

Question: Can you tell me how often a piston gets too loose in the cylinder and how long wrist pin bearings ought to last? I have owned my car only one season and do not drive very much, but have had to have the cylinders rebored, new pistons made and new wrist pin bushings put in once, and now the garage tells me I will have to have it done again. I cannot understand why this should be. I have friends who drive the same make of car and they have no trouble. I use all the oil possible, but the garage man tells me it is just natural wear and ought to be attended to once every three months on all cars. The expense is heavy and I do not feel that it is justified. My trouble is that the car does not run smoothly at slow speeds as it did when I got it.—J. S. W., Ill.

Answer: The first thing I would suggest for you to do is to change your garage man. If you have had your cylinders rebored even once in this length of time, you have had it done once too often. Some mechanics have a mania for doing this and will advise it as a cure for all sorts of troubles. It should not be necessary except after several seasons' use, and I know of cars that have been running constantly for six or seven years in which the

The mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and consulting engineer with the Western Electric Co. He is now service manager for the Chicago Republic Truck Co. When shop information is desired, write Mr. Hinrichsen, care this office.

cylinders have never been rebored. It is necessary to do it sometimes, for there is some wear, but to do it every three months is ridiculous. Wrist pin bushings should last at least ten thousand miles if properly lubricated. I rather think your trouble is due to leaking valves.

* *

Steam Car Query

Question—I wrote you some time ago in regard to steam cars and you answered me in a way that left it up to me as to whether to buy one or not. I told you at the time how much trouble I had had with gasoline cars and what I had been told about how I could keep a steam car in repair myself. You did not give me any opinion as to whether I could do my own work on a steamer.

Since then I have ridden several times in a steamer and am surprised at the ease with which they are operated and the wonderful power they develop. Then, too, there is no transmission to bother with and no gears to shift. It is just open the throttle and go as fast or slow as you want to.

F. J. K. —, Ind.

Answer—I don't like to advise any one about doing his own repairs. It all depends on the man. A man with any mechanical ingenuity who will study the mechanism of his car and get the principles of its operation fixed in his mind ought to be able to make all minor repairs. The same rule holds good with a steam car. There is something fascinating about a steamer. The smoothness and ease of operation that you speak of is certainly an advantage. Personally, I like to drive a steamer. There is not much difference in maintenance cost as far as my experience has gone.

It might be that you could master the steam car principles easier than the gasoline car ones and in that case you would be ahead. The steamer will give you good service and should be satisfactory. I am sure I do not wish to advise you either for or against. I don't want you to come back at me and say that I gave you a bum steer. Suppose you get the steamer agent to let you fool around in his shop for a while before you make up your mind. You will know more about it then.

Wilber Motor Stand Time Saver in Ford Repair Shop

One of the greatest time-saving devices for the repair shop that does any work on Ford engines is the Wilber motor stand. One of the advantages of the stand is that after the engine is once in place it does not require the aid of even a helper for the mechanic at work. The workman can go through the whole block making each necessary repair, bolt on the transmission, and then transfer the completed job either to the running-in stand or to the car itself.



It is designed for and adapted to support only the Ford engine. There are nearly 1,000 of them in use and every repairman who has one says he could not get along without it. The block is supported by steel lugs direct from the head flange of the stand to the two holes of the outlet pipe on the other side of the block. These lugs are speeded into place by one helper while the motor is being lowered into position.

After the block has been bolted in place, the entire operation of overhauling can be finished without further assistance. The stand is made of angle iron set up in a tripod. The head and flange are made of re-enforced cast iron. Its durability is shown by the fact that during the eight months it has been distributed by the Sturr-Bullard Motor Co., only one stand has needed a new part.

The stand has been on the market for nearly two years. When it was first put out by Mr. Wilber he was so busy he had to neglect it but the Sturr-Bullard firm has arranged to care for orders as received. Full details as to prices to the trade will be supplied to dealers that write to the Sturr-Bullard Motor Co., Harmon place, Minneapolis, Minn., and mention the AMERICAN GARAGE AND AUTO DEALER.



The Curtis Sign

Illustrated above—is 10x14 inches—baked enamel on steel. Cannot be bought, but is furnished FREE with every CURTIS Garage Air Compressor—and cannot be had in any other way.

Install a Curtis Air Compressor

Display a CURTIS "FREE AIR" SIGN above your door—it inspires confidence and will help build your business. Motorists are looking for this familiar CURTIS slogan—because they know oil rots tires—and that a CURTIS Air Compressor furnishes AIR FREE FROM OIL, which means fewer blowouts, greater tire mileage and less repairs. The CURTIS is the ONLY Garage Air Compressor with the controlled splash oiling system that eliminates all danger of forcing oil into the air line.

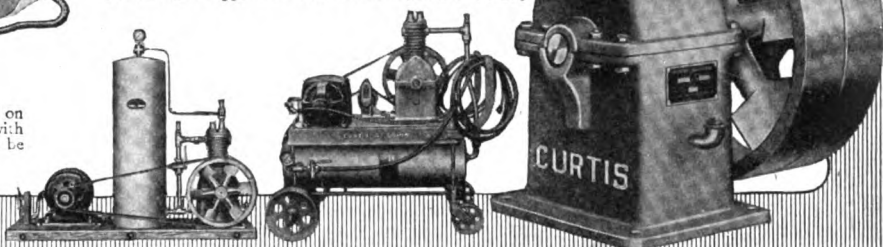
CURTIS AIR FREE FROM OIL

Investigate the many exclusive features of CURTIS Garage Air Compressors. The line is complete—five sizes—stationary or portable. Just write your name and address on the margin of this advertisement—tear it out and send it to your jobber, or to us direct, for complete information and prices.

Curtis Pneumatic Machinery Co.

1515 Kienlen Ave., St. Louis, Mo.

Branch Office—530-U Hudson Terminal, New York City



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Kindly let me know more about the Power and Light sales agency proposition.

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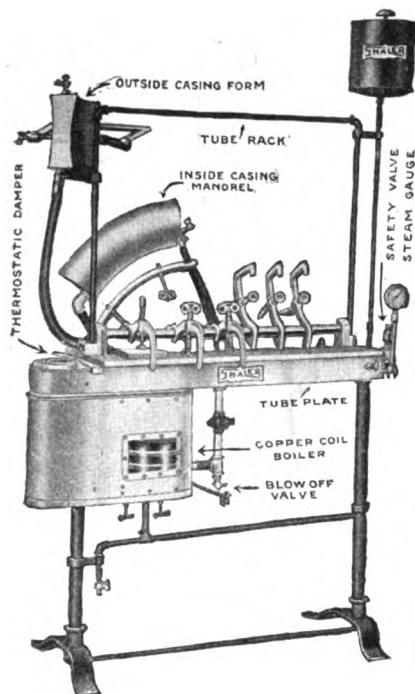
Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

Accessories and Garage Equipment

SHALER VULCANIZER MAKES TIRE REPAIRING PROFITABLE.

Every one in the automobile business admits the possibilities there are for big profits in tire repairing. Many repairmen are getting these profits. Others are postponing their start in tire repairing because they have received the impression somewhere that tire repairing is a mysterious, difficult art to learn or that the necessary equipment is exceedingly expensive.

Right now is the time to give tire repair-



ing serious consideration. The high cost of tires and the possible scarcity of them is filling motorists with a desire to have repair after repair made until the last possible mile of service has been obtained.

One of the types of tire repair equipment that is especially adaptable for the small garage that wants a simple, inexpensive vulcanizing plant, as well as for the repair shop that demands reliability and large capacity, is the Shaler Type NPR No. 41.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

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Name

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illustrated herewith. There is ample capacity for handling about 200 tubes and a dozen casings daily. Any type of repair that is practicable with any vulcanizer can be handled, from tube punctures to the largest casing blowouts. By the use of the wrapped tread method, adapted from the method used by most tire manufacturers in making tires, the repair of casings is reduced to the simplest terms. And all sizes and kinds of casings are mended with one set of moulds.

Great economy of repair material is obtained by the elimination of cutting away and replacing a section of the tire as is often done by repairmen, and at the same time a stronger repair is made than when the tire is weakened by cutting into sound fabric. A fifty per cent saving in time of curing is accomplished by heating the tire from inside and outside at the same time.

This vulcanizer is heated by steam, generated by a gas or gasoline burner. One of the outstanding, exclusive features which have made it standard throughout the world, is the automatic control of temperature by means of a thermostat. It is impossible to overcure or undercure a tire and no attention needs to be given to the vulcanizer while it operates, as the temperature cannot vary from the correct degree.

Despite the obvious advantages of the Shaler plant its price is exceedingly low, only \$70 (subject to trade discount). The C. A. Shaler Co., Waupun, Wis., also makes many other models for repair shop use and a line of motorists' emergency vulcanizers which are among the best selling accessories on the market and are handled by practically every jobber.

BERMO WELDING PLANTS

SENT TO INDIA AND JAVA.

The A. J. Bermo Co., Omaha, Neb., has recently completed and made another shipment of its Bermo welding plants to Bombay, India. A similar repeat order has been sent to Batavia, Java.

SCHMIDT INTERNAL GRINDER

DOES ACCURATE WORK.

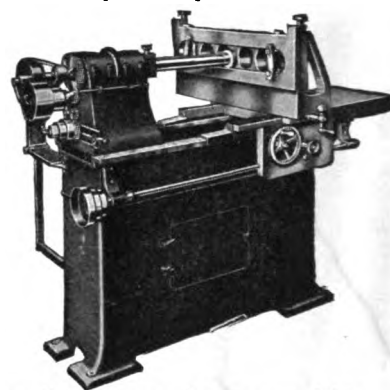
The Schmidt internal grinder, here illustrated, is the development of several year's effort to produce a popular priced equipment, suitable for accurate and quick grinding of engine cylinders of all types. It is said to be exceptionally accurate and is meeting a ready demand among owners of garages and repair and machine shops.

The new models are built with an automatic reverse feed for the carriage. The grinder has a capacity for grinding cylinders from 2½ to 8 inches in diameter and 15 inches in length.

The B. L. Schmidt Co., Davenport, Iowa, is also producing a repair shop tool for piston boring which is said to do the work in one-fifth the time, makes the work absolutely accurate, and does not require mechanical skill.

It consists of a V-block to which are attached two uprights serving as guides for the sliding yoke that carries the guide bushings. The upper ends of the uprights are threaded, and the clamping nuts are knurled to permit ease of operation. A gauge is attached to one end of the V-block for setting the piston to proper position.

The V-block also is provided with two lugs, or ears, for clamping to the machine table. The jig is fitted with any desired size of slip bushings and is adjustable to all sizes of pistons up to 6 inches in diam-



eter, the distance between uprights. It costs \$35.00.

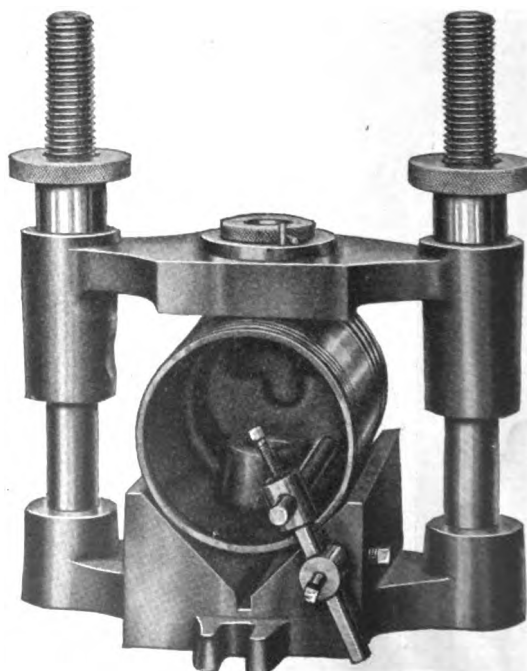
Descriptive literature or further particulars will be gladly furnished upon request. Simply mention the AMERICAN GARAGE & AUTO DEALER.

PHILLIPS ENGINEERING FIRM HAS NEW BOOK ON ELECTRIC SYSTEMS.

The Phillips Engineering Co., Dayton, O., has just published a new 400 page book covering automobile electric systems and instructions given in many aviation and automobile mechanics' schools. It is a very comprehensive book prepared by a leading authority, and discusses every phase of automobile electric systems and instruction.

Sample pages of the new book will be gladly sent on request to any automobile dealer, garageman, and mechanic, or a complete copy of the book will be forwarded upon receipt of \$2.50 postpaid.

This is the same firm that makes the Model 302 test set for garagemen and repairmen, which enables electric system troubles to be located quickly and accurately. All inquiries should be addressed to the Phillips Engineering Co., Dayton, O.





Handle all your cash and records by machinery

A National Cash Register System will enable one girl to take care of every detail of the office work in your garage.

Every sale—cash or charge—is accurately recorded.

At the end of every day a glance at the register shows you the exact amount of the sales of gasoline, oil, and accessories.

It shows the amount of the charges for service and repairs. It shows how much cash should be in the drawer.

An N. C. R. System saves time, saves money, and conserves labor.

It stops garage "leaks."

It makes you careful, and it makes your employees careful.

A National Cash Register stops guesswork and losses

Fill out this coupon and mail it today.

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The National Cash Register Company,
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Please give me full particulars about an
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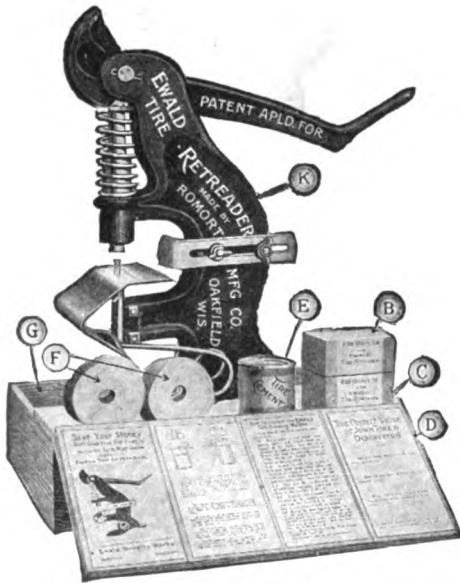
IRONCLAD KHAKI TWILL CLOTH GOOD MATERIAL FOR OVERALLS

Ironclad khaki twills are fast in color and "wear like leather," according to the Franklin Mfg. Co., which produces them. This cloth is worn by Uncle Sam's fighting boys and the wear-resisting qualities have caused its adoption by many makers of working garments for both men and women.

Coveralls, overalls, shirts and pants made of Ironclad khaki twills carry a yellow label showing some marching "doughboys," and are recommended for those who require strong garments when at work. The Ironclad khaki is for men's clothes and Miss Ironclad khaki is for women's clothes. Samples of the material will be sent to anyone who writes to the Franklin Mfg. Co., 133 Market place, Baltimore, Md.

EWALD TIRE RETREADER.

Millions of tires are literally thrown in the junk heap each year because of tire abuse, neglect, and the failure to have tires repaired. Tire conservation now is not merely a policy of good business, but it is almost a patriotic duty. So long as tires were plentiful and the public had plenty of money to buy them, the average user was little interested in tire conservation. But times have changed. Motorists now desire to get the maximum tire service.



The Ewald tire retreader will be of interest to garages, vulcanizing and tire repair shops, and the automobile world generally. With the Ewald process, rim out, blown-out, punctured, sand blistered, stone bruised, or damaged casings can all be saved and made serviceable again by stapling one casing over the other, which experience shows, results in from 1,000 to 2,000 or more miles of good service.

There are very liberal profits in retreading, as no motorist will hesitate to pay a reasonable price so as to obtain increased mileage. After being set properly, the staples will not pull out. And it is said that the staples will outwear the rubber fabric of the tires. Neither will the staples chafe the inner tube if the strip fabric is used, as per instructions.

With every Ewald retreader there is furnished a fabric rubber liner, which is all prepared, ready to cement in place. When this is done, the staples are all covered and there is no chafing on the inner tube whatsoever. Three years of thorough tests have proved, and it is claimed that results are successful. Makes a strong tire, puncture proof, and blow-out proof for thousands of

miles. Doubles the strength in thickness.

With every Ewald tire retreader there is furnished:

- 1 box of 250 staples $\frac{1}{2}$ inch long.
- 1 box of 250 staples $\frac{3}{8}$ inch long.
- 1 full sheet of directions.
- 1 can of reliner cement.
- 2 rolls of reliners.
- 1 box in which this outfit is packed.

Numerous letters are on file which show that garagemen and repairmen are paying for the Ewald retreader out of the profits of their first day's work. Some are making as high as \$25.00 profit per day.

The Romort Mfg. Co., Oakfield, Wis., or its sales agents, the Zinke Co., 1323 S. Michigan Ave., Chicago, will be pleased to send descriptive literature or further particulars upon request.

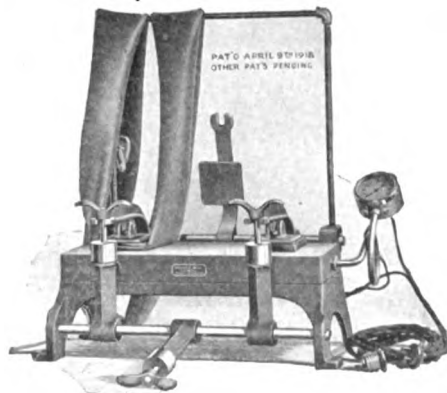
INTERNAL GEAR AXLE BEARINGS SERVICE

Anticipating post-war business the Pruyn Bearings Exchange, 1919 S. Michigan avenue, Chicago, has made arrangements to carry in stock and specialize in bearing replacements of all types used in internal-gear driven axles used in trucks and truck units. The stock will consist of straight and tapered roller bearings of all sizes as well as the single and double roll ball bearings used in internal-gear axle construction.

Through their familiarity with the bearing sizes used in different makes and weights of axles the Pruyn officials are in a position to render the trade prompt and efficient service, especially where the worn bearing is sent in to be duplicated. This service is in addition to their practice of regrinding worn annular ball bearings or sending reground bearings from stock in exchange.

HEINTZ ELECTRIC STEAM VULCANIZER

An automatic electrically heated steam vulcanizer, suitable for the garage, repair shop, tire shop, or commercial user, has been patented and placed on the market. It has an electric heating element similar to that used in an electric flat iron, which heats the water in the vulcanizer casing until the desired steam pressure is obtained. The steam is then maintained at any desired pressure by a magnetic switch which turns the current off, and on, automatically as the pressure rises and falls, so that the variation will not exceed a pound during an entire day. It requires twenty minutes to generate steam pressure.



This vulcanizer meets the requirements of the fire insurance companies, and can be operated anywhere by an inexperienced operator without danger of fire or explosion. It is also impossible to overcure or undercure the work, due to the uniform temperature maintained. Current may be taken from any light socket, and the cost of operation is from one to two cents per hour, depending on the size of the machine.

It is made in two sizes for repairing either three or four tubes at a time. Guaranteed by the manufacturers for one year. Manufactured by Jas. C. Heintz & Company, 2071 East Ninth St., Cleveland, O.

Overland Cash to Build Lincoln Highway Stretch

The increased load thrown upon the country's transportation facilities by war needs has brought realization of the economic influence of better roads. Special efforts are being made by the Lincoln Highway officers to speed up work wherever possible and to lay even larger plans for after-the-war work.

The Willys-Overland Company has just been notified by the Lincoln Highway Association that a large fund given by them is to be expended in building stretches of road through Sweetwater and Carbon counties in Wyoming. Z. E. Severson, Wyoming state highway engineer, is now making plans so that the work may start at once, the state and counties matching the Overland fund dollar for dollar.

The road is to be built upon an agreement between the officials of the Willys-Overland Company, the Lincoln Highway officers and state and county officials.

Construction of these sections will complete the Lincoln Highway route across Wyoming, following the old Union Pacific grade for a considerable portion of the distance. The sections, totaling about 65 miles, will be known as the Willys-Overland sections of the Lincoln Highway.

Belgian Girl Refugees Help Make Liberty Motors

A thoroughly practical retribution was visited on the Prussians by a number of Belgian refugees, now in Detroit, who suffered "shrecklichkeit" at the hands of the Hun.

Esther, Laura and Anna Verbeke, late of Ypres, were driven from the Convent of St. Jean by the Uhlans in the early part of the war, and later were literally shelled out of the house in Ypres in which they had taken refuge. A bomb in the attack of April, 1915, tore the roof away.

Through many hardships these refugees made their way to America and eventually to Detroit, where their father had located, and all are now employed by the Packard Motor Car Company in war work.

It is with grim satisfaction that these young Belgian women are now turning out parts for the Liberty motor, a war engine that has been striking terror, such as they have experienced themselves, into the minds of the German people as no other engine of war has succeeded in doing.

They are part of a force of approximately three thousand women and girls who have been trained in the Packard Technical School for women factory workers. This institution trains applicants for war work in things mechanical—inspection, machine operation, assembly and the like—so that they can be graduated into the shop as producers in a program of 100 per cent war work.



Have you wanted an agency that will "fill in" and hold up your profits?

MOORE AUXILIARY TRANSMISSIONS

Are Essentials for Commercial FORDS, FORD TRUCKS and FORD TRUCK ATTACHMENTS

The market for them is now greater than ever, now that Ford production is curtailed, and those now in use must be kept in service as long as possible. Invaluable on commercial cars and for truck attachments.

Gives 4 forward and 2 reverse speeds to Fords. An INTERMEDIATE SPEED for hill climbing. An EMERGENCY LOW to pull you out of sand or mud. A POSITIVE NEUTRAL for easy cranking.

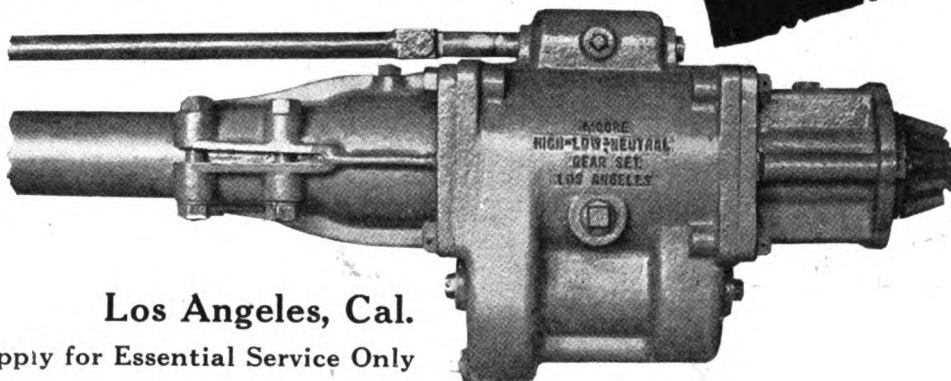
DEALERS—Here is a money-maker. This Transmission is in demand; stays sold; and is easily installed. No machine work or brazing. Liberal dealer discount. Write today for terms.

Tractor-Train Company

1344 So. Wall Street

Los Angeles, Cal.

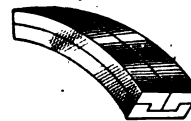
At the present time we can supply for Essential Service Only



Have you a "Piston Ring Primer" in your pocket? It has 16 pages of valuable information. Free to you.

Ever-Tyte Bill Says:-

Us fellers have got the "rep" of being the next thing to a guy who makes his livin' with a piece of lead pipe, but just the same, there's a few of us takes a pride in turning out our "jobs" right and besides we've got the real dope on a few of the things that goes in and on "gas wagons"—Most guys don't know how important piston rings are, and how much trouble they can save themselves by takin' a few tips from us guys. Things are improvin' all the time and my tip is to try EVER-TYTE PISTON RINGS if you want more power—a sweet runnin' motor and want to cut down your oil and repair bills.



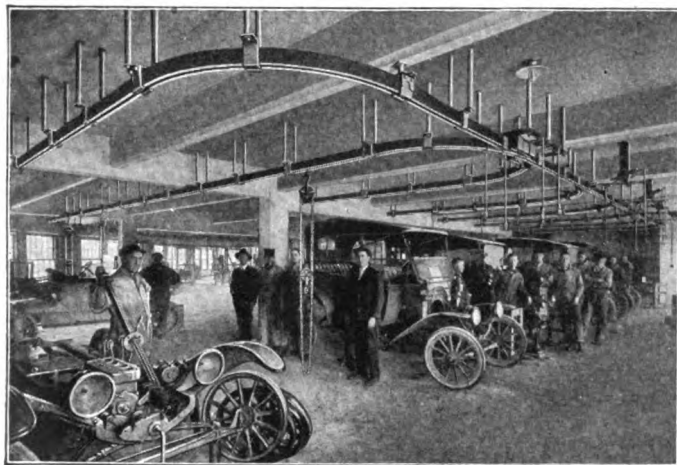
RIGHT ANGLE INTERLOCK

The EVER TIGHT PISTON RING Co.
1609 KINGS LAND AVE. SAINT LOUIS

"Over-Way" Carrying Systems Save Time in Shop and Garage

In every machine shop or garage, the handling of material, either in the raw or finished state, is an item of considerable expense.

Overhead carrying systems, where construction of the building and the method of handling the product allow, are the



Showing the "Over-Way" Carrying System in use by the O'Meara-Green Garage, Denver, Colo.

most satisfactory, economical and efficient methods of handling transportation. It takes all the bulk from the floor where space is needed, and suspends it from the ceiling, where there is space to spare, no floors to wear out, no moving of trucks to allow others to pass, no lost time and no wasted energy.

Garage and repair shop owners that are desirous of keeping abreast with the times will do well to investigate the special overhead carrying equipment which has been

requirements of a larger institution, which might need a complicated system capable of lifting and carrying as much as 8,000 pounds. Whatever your requirements may be, the engineering department of the Richards-Wilcox Mfg. Co. will be pleased to advise what equipment is suitable, furnish drawings and prices, providing a rough sketch with dimensions indicating also what is to be accomplished is sent.

The O'Meara-Green Garage at Denver, Colo., is getting good results from using their "over-way" system for carrying heavy parts such as differentials, engines, etc., from the parking floor to the repair division, and also for lifting cars on end so that repairmen may have easy access to parts underneath, and be within comfortable reach of their tools.

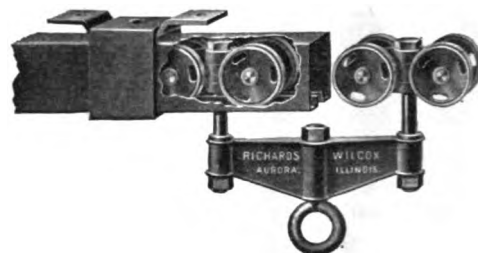
As indicated in the illustration, side tracks of the overhead system extend over the parking floor in such a way that it is convenient to lift parts of machines and carry them to any point in the garage by running the carrier out from the side track onto the main overhead line, and by that means to the repair division or whatever point is desired to be reached.

According to the O'Meara-Green Co. the "over-way" system facilitates its work, saves labor, time, money and floor space, all of which are appreciated advantages in times of peace, as well as war.

The Simms Auto Co. at Grand Forks, N. D., is another concern that has high praise for the Richards-Wilcox overhead system. This firm, which has one of the largest and best furnished garages in North Dakota, uses its "overhead system" chiefly for handling heavy parts and repairing of cars. With this system they lift automobiles and trucks to a position practically on end, which gives repairmen easy access to parts under the car, and does away with the necessity of the workman's lying on his

back in an uncomfortable position with tools out of reach.

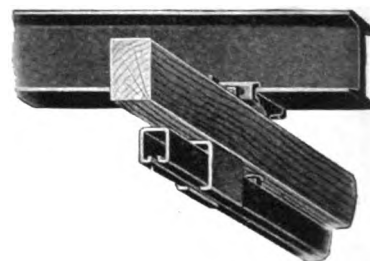
Engines, differentials, transmissions and other heavy units are readily lifted and transported to the work bench by one man using the R-W overhead carrier, saving time, expense and damage claims. The



No. 100-32 and No. 100-35 R-W Overhead Carriers and Trolley Track

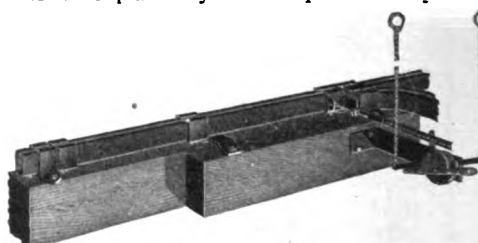
Simms concern would not be without this modern convenience.

Inquiries concerning the Richards-Wilcox "over-way" systems are solicited from



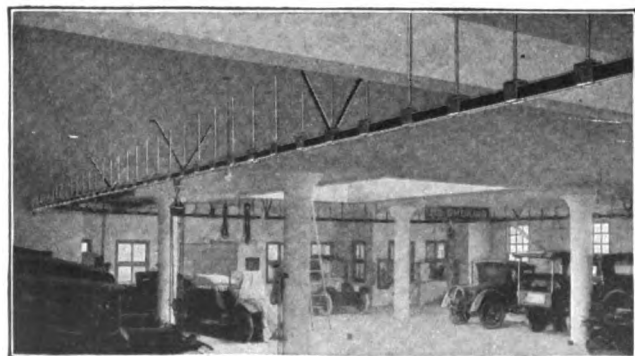
Method of Attachment to Beam

interested owners of garages and machine shops, and to those who desire it, a copy of "Overhead Carrying Equipment," which is an explanatory booklet published by the



No. 931 and No. 933 Two-way Switch

company, will be gladly forwarded. This booklet describes and illustrates overhead carriers, track, brackets, curves, switches, hoists and other equipment forming overhead carrying systems.



Simms Auto Company, Grand Forks, N. D., well pleased with R-W Overhead Carrying System for handling heavy loads

designed by the Richards-Wilcox Mfg. Co., Aurora, Ill., and is already in extensive use.

An "over-way" system may be adapted to the requirements of a very small machine shop or garage, which would need only a short stretch of comparatively light track with a carrier and hoist, or to the

CLASSIFIED ADVT.

Fifty Percent Saving

We are overstocked on the following new standard parts.

Batteries, 12 Volt, Detroit.....	\$11.00
Horns, electric.....	.70
Horn Buttons.....	.10
Wire Wheels, 30x31 (Set of five with Hubs).....	30.00
Mufflers, 11 Inlet.....	.75
The Carrier, rear type (for 30x31 rims).....	2.50
Grease Cups, 000 Steel Compression, 1 pipe thread.....	.04
Headlamp Brackets, 7" Prop. Pr.....	.80
Rims, 30x31, Clincher.....	2.00
Frames, 2400 lbs. capacity, complete.....	9.00
Transmission, with 8 disc clutch.....	35.00
Propeller Shafts, with two universal joints.....	7.50
Fenders, full crown (set).....	16.00
Gas Tanks, speedster type, 14x36.....	12.50

MAIBOHM WAGON COMPANY
Racine Junction, Wis.

Garages depend for good soldering on KESTER ACID CORE WIRE SOLDER

Kester Acid-Core Wire Solder is the "inseparable pal" of the garageman who wants to do his automobile soldering cheaply and with satisfaction to his customers.

Take for example H. A. Francis, of New Bedford, Mass., who after using several pounds, wrote us for more.

Mr. Francis writes in part: "It is very good and takes better and quicker than the solid wire solder."



Mr. Francis uses *Kester Acid-Core Wire Solder* for repairing auto radiators, lamps, mudguards, windshield frames, wash boilers and tea kettles, and reports that it not only saves labor, but time as well, is much handier, flows smoother, and does better work with less waste.

Every garage, repair shop, and service station should have a supply of this handy solder.

Sold in one pound coils in cartons, and on one, five and ten pound spools.

Order from your jobber

Chicago Solder Co.
CHICAGO - U.S.A.



SIMPLICITY

No complicated parts can confuse when GILL PISTON RINGS are used. The simplicity of their one-piece construction is illustrated above. Guaranteed to hold compression and prevent carbon formation.

Ask your jobber or write for literature

GILL MANUFACTURING COMPANY

351 West 59th Street

CHICAGO, ILLINOIS

The PERFECT ONE PIECE PISTON RING.

STORM

Tools mean prosperity for your garage

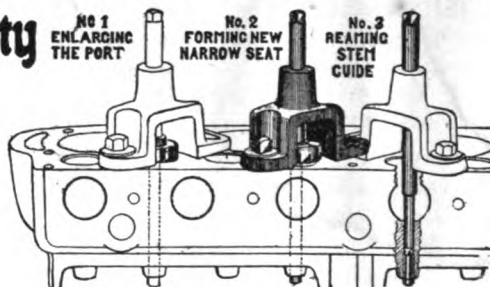
Repair business was never so good as now, BUT it can be much better for you if you will use STORM Garage tools.

We make a variety of efficient, time and labor saving, money producing tools, including the STORM Cylinder Reboring Machine, Storm Piston Vise, Storm Valve Port Renewing Outfit and Storm Connecting Rod Bearing, Reamer Jig and Straightening Gauge.

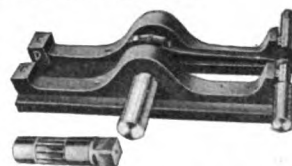
FOR SALE BY ALL LEADING JOBBERS.
Ask for copy of catalogue No. 30.

STORM MFG CO.

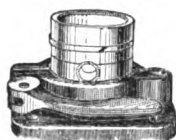
1714 4th St., THOMPSON, IOWA



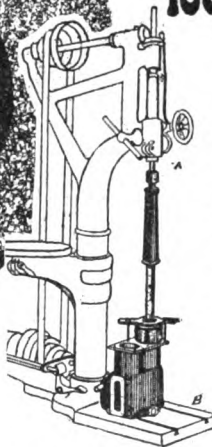
Storm Valve Port Renewing Outfit



The Storm Connecting Rod Bearing Reamer, Jig and Straightening Gauge

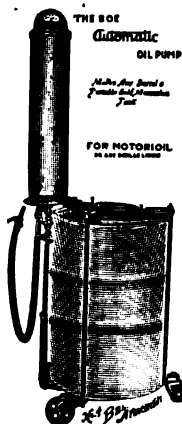


Storm Piston Vise



Storm Cylinder Reboring Machine

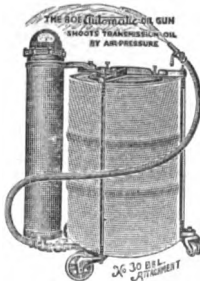
Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



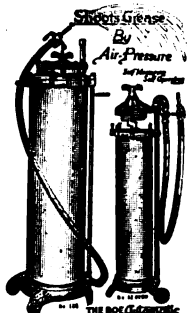
ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 82 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA



Indispensable, around the soldering shop—

Over 5000 mighty bright soldering men say they have learned a lot from

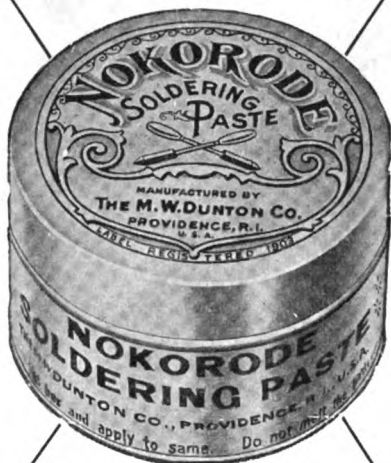
SOLDERING KINKS

ILLUSTRATED

If you need it send your quarter to

Telephony Pub. Co.
116 South Michigan Avenue, Chicago

Time has proved the
superiority of
NOKORODE
soldering paste



For many years this soldering paste has made good on every kind of automobile work.

It makes those difficult jobs easy and lends perfection to any soldering job.

Why not try it? Write today for literature and prices.

THE M. W. DUNTON CO., Providence, R.I., U.S.A.

"RELCO"

The Ultimate Automobile Lock

The lock that the motoring public has been waiting for. Gives absolute protection. Adaptable to any make of car other than Fords. Mechanically a wonder. Fitted with the King - Multiple-Tumbler Lock, capable of countless variations and for which no master key can be made. A half turn at the key locks or unlocks it without moving the lock from its position on the steering shaft. Once locked, car cannot be driven or towed. Powerfully made—no thief with a hammer can break the "RELCO."

Approved by the Underwriters' Laboratories, and affords 15% discount on insurance.

DEALERS: You will find a ready market for the "RELCO" Lock. Your profit is liberal. We also manufacture the famous MUELLER LOCK for FORDS.

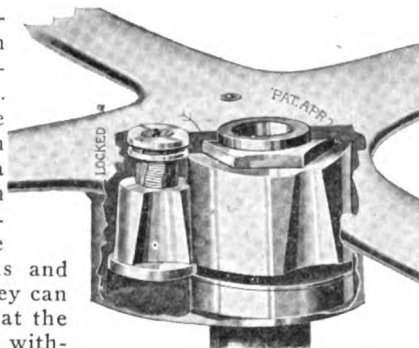
Write today for particulars.

THE RELIANCE COMPANY

411-417 So. Sangamon St.,

CHICAGO, ILL.

Distributors in every state



Service

CAR owners will generally estimate the quality of your service by the quality of the product you sell.

Satisfaction to car owners—satisfaction and profit to dealers—that is the ultimate aim of Harvey Service.



THERE'S A HARVEY JOBBER NEAR YOU

Our new catalogue giving Complete measurements of over 900 Styles of Springs is yours on request

**HARVEY SPRING
& FORGING CO.**

922-17th Street

RACINE, WIS.

WILLARD SUPER HEATER

A great
saving
for the car
owner.

Big Profits
for You

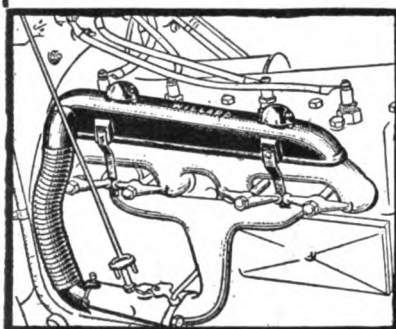
Cuts Gasoline Cost 30%

The high price of gasoline has multiplied the demand for the

WILLARD SUPER HEATER for FORDS

It secures full power from the gasoline used by the introduction of superheated air into the standard Ford carburetor, which completely vaporizes the gasoline. The saving effected is (in actual use) over 30%.

MAKES YOUR FORD RUN LIKE A PACKARD

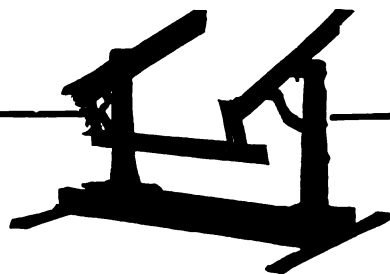


Retail Price,
\$5.00

DEALERS: A Willard Agency will prove a big source of profit during 1918.

Write today for our liberal trade offer.

The Willard Co.
Dept. K
South Bend, Indiana



Manley

EVERY WAY ENGINE STAND

The most convenient piece of equipment possible for any Garage or Repair Shop to install. Permits any engine to be mounted, turned and securely locked in any desired position, securing best possible light and working position.

Enables workmen to do better work—and more rapidly. A time saver and a money maker. Only stand made which will mount any motor. Stand can be rigidly mounted on Portable base, permitting easy and convenient movement of motor about shop.

This stand embodies all the well-known qualities of the MANLEY line. Can be furnished in either portable or stationary type.

OTHER MANLEY DEVICES

Hilite Portable Crane—Manley Portable Oil Service Outfit—Manley Universal Auto Press—Manley Arbor Press—Manley Garage and Shop Press—Manley Bench Press, Etc., Etc.

Write for prices and catalog.

UNITED ENGINE & MFG. CO.
Hanover, Pa.

AMPECO PRODUCTS

Sell readily because their superiority
is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

FULTON SALES CO., 1100 Karpen Building, Chicago

General Selling Agent for

**American
Machine
Products
Co.**

Marshall-
town,
Iowa



**Disabled Cars can
be towed in quickly
with it!**

HOLMES WRECKING TRUCK



**Robt. Holmes
& Bros.**
DANVILLE-ILLINOIS

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

You never can tell when the BUFFUM PATENT BUICK VALVE REMOVER will come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the only device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.

Every Garage and Repair Shop

should have a BUFFUM BUICK VALVE REMOVER as part of its regular equipment.

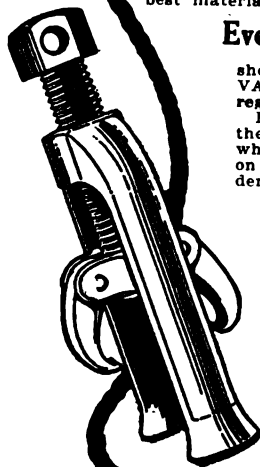
Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00 Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.



YOU CAN MAKE BIG PROFITS Charging Auto Storage Batteries

Normal demand for battery charging is constantly increasing. War curtailment of motor car production means more old cars kept in service and still more batteries to charge. Battery charging today presents the biggest new line of garage profit, and with HB equipment, you can handle it without extra help and with very little attention. Hundreds of HB owners are clearing

\$100 to \$150 a Month Extra Profit

—Some even more. What you can make depends entirely upon how hard you push this line of business. While we furnish smaller capacity outfits or belt drive equipment, where city current is not available, we recommend this new 32-Battery Capacity Charger for Battery Service Stations, for garages specializing in battery charging, or wherever this capacity can be profitably employed.

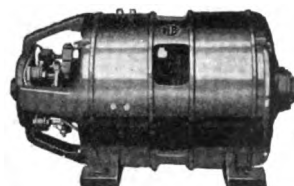
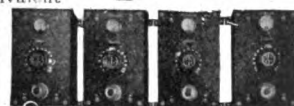
This Charger contains an amply designed 5 H.P. motor, operating from city current and developing 2 K.W. generator capacity. It will charge 32 6-volt batteries or their equivalent at one time. Four separate charging lines and panels permit individual attention to every battery. It is a real money-maker, which, with convenient terms of payment offered,

Will Easily Pay for Itself

while you use it. Under absolute money-back guarantee, you run no risk. Write at once for further information, prices and terms. Start this money-making business now.

Hobart Bros. Co.
Box G11 TROY, OHIO

with this
32 Battery
Capacity
Charger



No wasted "Free Air"

SNAP! When the inflating valve is removed the AIR PRESSURE STOPS

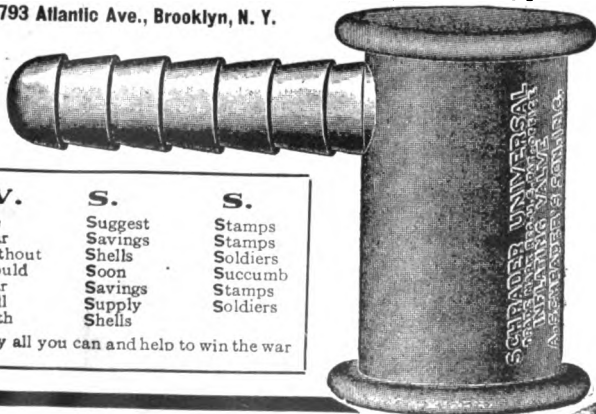
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from 1/4 to 1/2 inch. Price, \$1.50.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war



Uncle Sam's Fighting Boys Wear IRONCLAD KHAKI

(Twill Cloth)

You men and women on the "firing lines" of industry should wear garments of this patriotic economy cloth, too. Its fast color and wears like leather.

COVERALLS OVERALLS SHIRTS and PANTS

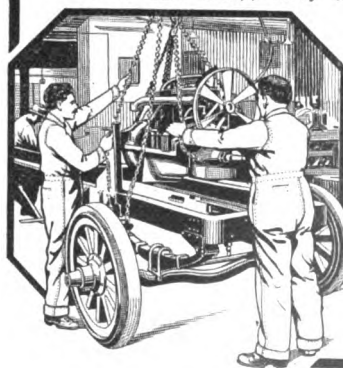
made of the genuine IRONCLAD KHAKI (the kind Uncle Sam uses); carry the yellow "Army label" like the above. LOOK for it and the Guarantee Bond in the garments before you buy.

See for yourself what Ironclad Khaki and Miss Ironclad Khaki, the special woman's overall cloth, look like. Write today for free samples.

Garments on sale by
dealers—everywhere

We are makers of the
cloth only.

Franklin Manufacturing Co.
133 Market Place, Baltimore, Md.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company
1002 Washington Boulevard
Chicago, Illinois



Smooth as the flight of the birds



going South for the Winter is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 200,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There are thousands sold every month.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.
Hoopestown, Ill.



MONOGRAM OILS

& GREASES

On Sale At Every Garage

*This means you
Mr. Garageman
the Public knows
what is best
and demands it.*

**NEW YORK
LUBRICATING OIL CO.**
NEW YORK CITY and CHICAGO
Branches in all Principal Cities

Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

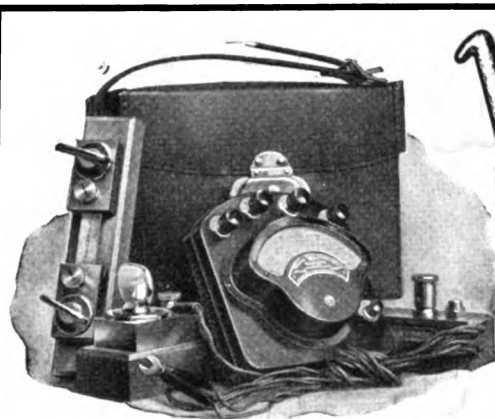
They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS



Weston

Model 280 GARAGE TESTING INSTRUMENT

This is the most practical Electrical Equipment you can install. It enables you to locate electrical troubles in motor cars and apply the proper treatment to remedy them.

This Weston Instrument is considered indispensable by thousands of garage owners who use it. A very large demand has resulted. No competitive make of instrument is nearly so comprehensive in scope or dependable in operation.

In normal times we can promptly fill orders, but under present circumstances, when government demands are exceedingly heavy and our raw materials can be used only for government work, garages should either furnish us with government contract numbers, when available, or place their orders subject to preferential delivery when it is possible for us to manufacture and make shipment of commercial orders.

WESTON ELECTRICAL INSTRUMENT CO., 30 Weston Ave., Newark, N. J.
23 Branch Offices in the Larger Cities



GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

Beware of Imitations!

Wm. B. Scaife & Sons Co.

26 Cortlandt St.
NEW YORK, N. Y.

First National Bank Bldg.
PITTSBURGH, PA.

GASOLINE STORAGE OUTFITS

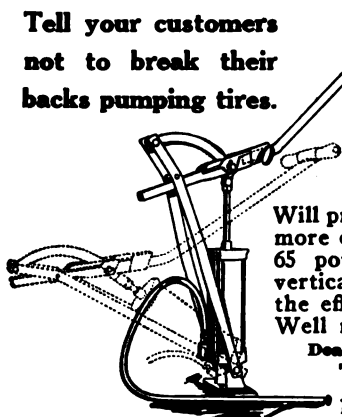
If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.

New York Office:
26 Cortlandt St.

First National Bank Bldg.
Pittsburgh, Pa.

Tell your customers
not to break their
backs pumping tires.



\$500 Jensen Tire Pump

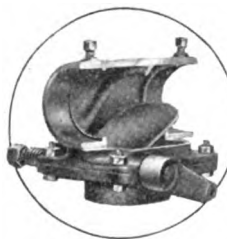
Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

Dealers' discounts on request

The W. H. Howell Company

10 State St., Geneva, Illinois

*"Tells the
motor's
secrets"*



For complete information about the G-P MUFFLER CUT-OUT write to Sales Department EDWARD A. CASSIDY CO., Inc., Madison Avenue at 40th Street, New York City

Manufacturers:

The G. Piel Co., Inc., Long Island City, N. Y.



Sells for \$4.00
Worth the price of car

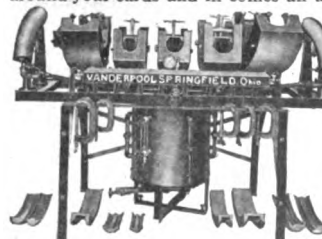
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Your ENGINE

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K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

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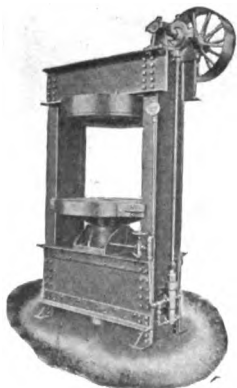
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We make
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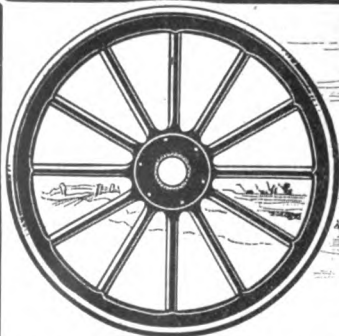
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Always accurate and serviceable.

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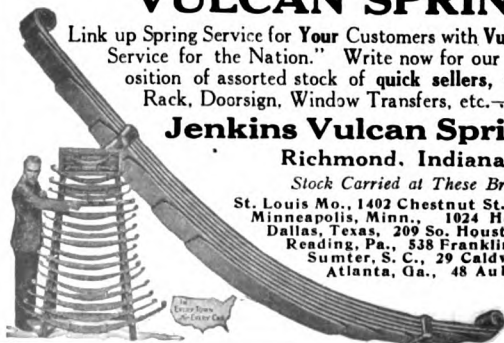
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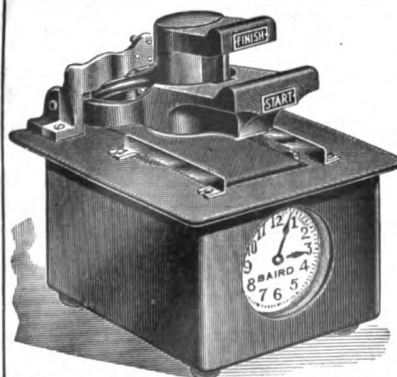
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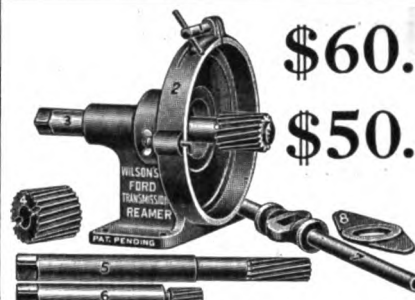
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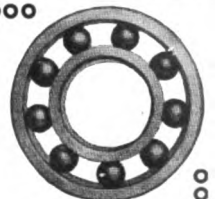
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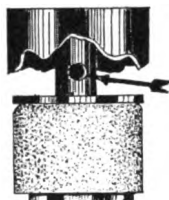
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5 ply; 9/16" outside,
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Allows air to pass
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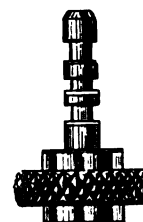
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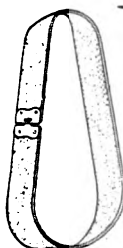
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New Accessory on the market. Write
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Gill Mfg. Co., 357 W. 59th St., Chicago.
Inland Machine Works, 817 Mount St., St. Louis.
Keys Piston Ring Co., 3008 Olive St., St. Louis.
No Leak-O Piston Ring Co., Baltimore, Md.
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Prupp Ball Bearing Works, 1919 Michigan Ave., Chicago.

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J. H. Haney & Co., Hastings, Neb.

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Hooven Radiator Co., 519 Monroe St., Chicago.

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Federal Sign System, Lake & Desplaines Sts., Chicago.
Flexlume Sign Co., Niagara St., Buffalo, N. Y.

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Jenkins Vulcan Spring Co., 1402 Chestnut St., St. Louis.

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E. H. Sprague Mfg. Co., Omaha, Neb.

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American Oil Pump & Tank Co., Cincinnati, O.
Wm. B. Scaife & Sons, Oakmont, Pa.
Visible Gasoline Dispenser Co., 422 First Ave., Pittsburgh, Pa.

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Weston Electrical Instrument Company, Newark, N. J.

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Bird Equipment Co., 324 W. Ohio St., Chicago.

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Kimball Tire & Rubber Co., 1469 S. Michigan Ave., Chicago.
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The Greb Co., 194 State St., Boston, Mass.
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St. Paul Welding & Mfg. Co., 173 W. 3rd St., St. Paul, Minn.
Imperial Brass Mfg. Co., 529 So. Racine Ave., Chicago.

WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

WRENCHES

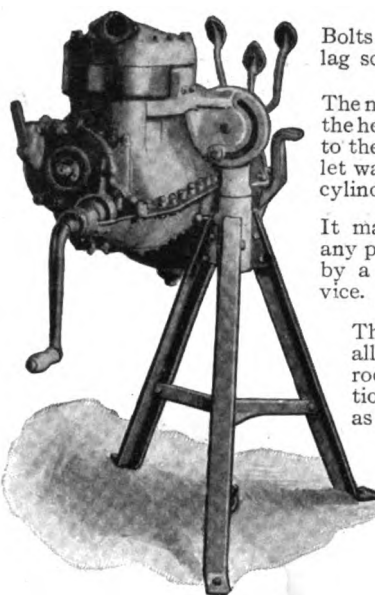
The Graham Roller Bearing Co., Coudersport, Pa.

Index to Advertisements

A		J	
Adams & Elting.....	—	Jenkins Vulcan Spring Co....	48
Advance Automobile Accessor-	54	Jorgensen Mfg. Co.....	—
ies Corp.....		K	
American Accessories Co.....	51	Kennedy Car Liner & Bag Co..	51
American Bolt & Screw Case	49	Keys Piston Ring Co.....	48
Co.....		Kimball Tire & Rubber Co....	—
American Floor Surfacing Ma-	—	L	
chine Co.....		Lawrence & Co., L.....	50
American Machine Products Co.	44	Lawson Co., The F. H.....	—
American Oil Pump & Tank	—	Lourie Mfg. Co.....	48
Co., The.....		M	
American Technical Society...	—	McDaniel Rubber Co., Leo....	49
Aske Automatic Voltage Regu-	—	Malbohm Wagon Co.....	40
lator Co.....		Marvel Carburetor Co.....	6
Atlas Auto Supply Co.....	—	Marvel Machinery Co.....	3
.....Inside Back Cover		Miami Trailer Co.....	6
Atwell, Gordon C.....	50, 51	Milwaukee Tank Works.....	—
Auto Cape Top Co.....	50	N	
Auto Engine Works.....	50	National Cash Register Co....	37
Auto Salvage Co.....	50	National Rubber Filler Co....	8
Auto Spring Repair Co.....	51	National Wire Wheel Works..	8
Auto Wrecking Co.....	50	New York Lubricating Oil Co.	46
B		No-Leak-O Piston Ring Co....	51
Baird Equipment Co.....	49	Norma Company of America,	9
Bearings Service Co.....	—	The.....	
Bermo Co., A. J.....	48	O	
B. & M. Mfg. Co.....	—	Olympian Motors Co.....	—
Boe Co., H. M.....	42	P	
Brunner Mfg. Co.....	49	Panvar Co.....	—
Buettner Co., Chas. H.....	51	Paro, H. G., Co.....	—
Butler Mfg. Co.....	50	Phillips Engineering Co.....	49
Buffum Tool Co.....	45	Pondelick Bros.....	46
C		Pruyn Ball Bearing Works....	49
Cassidy Co., Edward A.....	10, 47	R	
Catalain, Andre G.....	50	Reliance Co.....	43
Chicago Baling Press Co.....	49	Redden Motor Truck Co.....	—
Chicago Solder Co.....	41	Romort Mfg. Co.....	5
Commonwealth Edison Co.....	—	S	
Curtis Pneumatic Machinery	35	St. Paul Welding & Mfg. Co....	50
Co.....		Scalfe & Sons Co., Wm. R....	47
D		Schaler Co., C. A.....Front Cover	—
Dearborn Truck Co.....	—	Schrader's Son, Inc., A.....	45
Defender Auto Lock Co.....	47	Simplicity Wheel Co.....	48
Detroit Auto Radiator Co.....	50	Sprague Mfg. Co., E. H.....	—
Detroit Weatherproof Body Co.	—	Standard Oil Co., of Indiana..	—
Dunton Co., M. W.....	43	States Chemical Co.....	—
E		Storm Mfg. Co.....	42
Eccolene Company.....	10	Sturr-Bullard Motor Co.....	52
Elgin Motor Car Corp.....	48	Sunderland Machinery & Sup-	—
Ever-Tight Piston Ring Co.....	39	ply Co.....	50
F		T	
Federal Sign System (Electric)	—	Tractor-Train Co.....	39
Fluxlume Sign Co.....Back Cover	—	Tungsten Mfg. Co.....	—
Forbes, J. P.....	51	Twitcheil Gauge Co.....	—
Franklin Mfg. Co.....	45	U	
G		United Engine & Mfg. Co.....	44
Ganschow Co., William.....	46	V	
Garden City Spring Works....	51	Vanderpool Vulcanizing Co....	47
Gill Mfg. Co.....	41	Visible Gasoline Dispenser Co.	48
Globe Mfg. Co.....	7	W	
Graham Roller Bearing Co.,	—	Wagner Specialty Co.....	51
The.....	43	Warshawsky & Co.....	50
Greb Co., The.....	—	Webber & Co., P. H.....	46
Greer College of Motoring....	50	Western Electric Co.....	35
H		Weston Electrical Instrument	—
Haney & Co., J. H.....	51	Co.....	47
Harton & Co., Inc., Thos. J....	—	White Star Refining Co.....	—
Harvey Spring & Forging Co..	43	Wiggins, J. B., Co.....	—
Haywood Tire & Equipment Co.	—	Willard Co., The.....	44
Hobart Bros.....	45	Williams Fdry. & Machine Co.	—
Holmes & Bros., Inc., Robert.	44	Wilson, K. R.....	49
Hooven Radiator Co.....	—	Z	
Howell Co., The W. H.....	47	Zinke Co.....	5
I			
Imperial Brass Mfg. Co.....	—		
Inland Machine Works.....	—		
.....Inside Front Cover			

The WILBER MOTOR STAND

The Fastest Time Saving Device for the Ford Repair Shop on the Market



Bolts solid to the floor with lag screw.

The motor is bolted through the head flange of the stand, to the two holes of the outlet water connection in the cylinder block.

It may then be turned in any position and held there by a positive locking device.

The mechanic can fit all bearings, pistons and rods, and in one operation turn the motor so as to grind the valves.

Needs only two men to do preliminary work — no chain or overhead track necessary — after that one.

Costs \$18.00 F. O. B. Minneapolis 5% Cash Discount.
You Lose Five Hours Every Day You Are Without One.

STURR-BULLARD MOTOR COMPANY
1208 Harmon Place, Minneapolis, Minn.

Make money by representing us.

5000

more miles out of old tires

Do not allow your customers to discard their old tires—McDANIEL CAN MAKE THEM LIKE NEW!

Our experts carefully examine all tires received by us, and such necessary repairs are carefully made. This applies to sand-blistered, punctured, rim-cut, or blow-outs.

The better cover is telescoped over the other one, then the bead is cut from the outer tire, and both are firmly locked together by the **SPECIAL McDANIEL DOUBLE TREAD PROCESS.**

Five thousand extra miles are easily obtained. Tire dealers, garagemen, and service stations should write at once for our most interesting proposition.



Leo McDaniel Rubber Co.
804 COMMERCIAL AVE. CAIRO, ILL.

**AUTOMOBILE
SPRINGS**
MANUFACTURERS AND SPRING SERVICE
GARDEN CITY SPRING WORKS
2300 Archer Ave. Chicago

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

CORK INSERT



A big success
-because it has made good on
hundreds of thousands of Fords

Why has Cork Insert made good in such a big way? What makes it work so smoothly? Simply this: The cork buttons provide *improved* friction. The powerful high-grade fabric carries the load.

It isn't the cork — It isn't the fabric
It's the COMBINATION

in the patented Cork Insert way—that has made Cork Insert the big success that it is.

Cork alone hasn't the strength for transmission lining usage. Fabric alone lacks frictional qualities. It glazes down too quickly, causing grabbing, slipping, chattering.

But Cork Insert has the ideal combination of

STRENGTH PLUS FRICTION. When you apply the brake, the corks come into contact with the brake drum first. They compress gradually and ease the load down to the fabric. The light pressure required, and velvety smooth action of the buttons of cork coming in contact with the drums, mean such long wear that Cork Inserts are far the cheapest in the long run.

Cork Insert is a big money maker —
one on which you can get deliveries

Cork Insert not only is a dependable money maker, not only is its use growing steadily, but it is a line on which you can get deliveries. It will pay you to push Cork Insert.



\$3 per
set of 3
 Rockies West, \$3.25
 Canadian Price, \$4.50

Advance Automobile Accessories Corp.

Dept. L7-1, 56 E. Randolph St.
 CHICAGO, ILL.



\$1
 for 1917-18 Fords
 85c for 1916 and earlier Fords
 Canadian Prices: 1917-18 model, \$1.50—earlier model \$1.25

TIRE-DOH

It s-t-r-e-t-c-h-e-s with the rubber

Sell it now YOUR trade wants it-

You can perform a patriotic duty by selling TIRE-DOH, *the standard tire repair outfit*, as you thus help conserve the precious supply of rubber.

Your customers will be receptive and interested in TIRE-DOH, as they can mend their old tires, tubes, and casings like new, getting added service—besides saving the price and necessity of buying new tires.

For you, Mr. Dealer—TIRE-DOH offers increased sales, increased business, and increased profits. Give us an opportunity to show you what you may expect of us in the way of co-operation.

**ATLAS AUTO
SUPPLY COMPANY**

680 Austin Ave.
CHICAGO - ILL.





She Knows What To Do When Fire Starts

There is the Fire-Choke in its firm, substantial holder. It takes her only a second to grab it, another instant to pull off the top, to pour out a handful of the dry chemical. Then she throws it on the fire. Instantly it is out. No damage. Nothing but a little powder to brush off.

Fire-Choke weighs only a few ounces. It has no mechanical complications. For extinguishing incipient fires it is unequaled, particularly fires involving oil or gasoline.

Dealers Wanted

Dealers are wanted in all parts of the country to handle Fire-Choke. A letter will bring you full information.

Put Up In Two Sizes
\$3.50 and \$5.00 Retail

The Flexlume Sign Co.

Niagara St. and Auburn Ave.

BUFFALO, N. Y.

AMERICAN GARAGE & AUTO DEALER

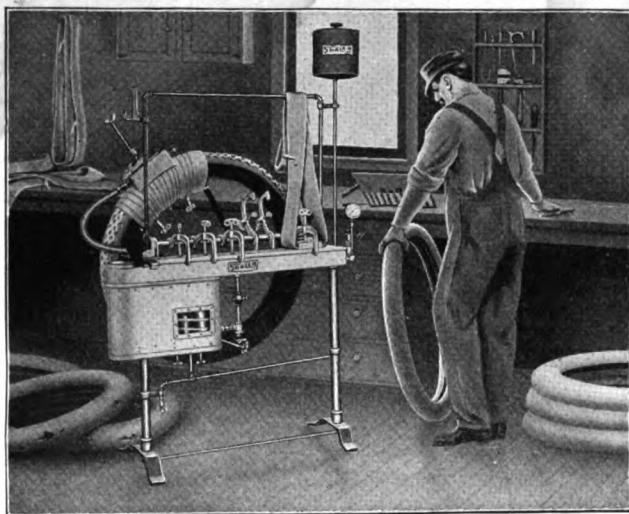


Published Monthly
116 So. Michigan Ave.
CHICAGO, ILL.

DECEMBER

1918

Vol. 9 -- No. 12
10 Cents the Copy
\$1.00 Per Year



Make Money Now Repairing Tires

The increasing cost and limited supply of tires makes it necessary for motorists to conserve their casings and tubes—to get the maximum mileage. Present conditions offer tire repair men a big opportunity to make money. Experienced help is not necessary. A boy can learn how to make perfect tire repairs in 30 minutes. Every car owner in your town is a possible customer. Jobs are plentiful because tires blow out and puncture every day. Motorists are willing to pay liberal prices for repairing punctures, blow-outs, cuts, tears, rim cracks, etc.

SHALER

Steam Vulcanizer for Repair Shops Is the Only One That Has Automatic Heat Control

Will do as much and as perfect work as the large, expensive vulcanizing outfits which cost from \$250 to \$500. The price of this Complete Steam Vulcanizing Plant—heated with either gas or gasoline—is remarkably low—\$70 subject to Trade Discounts. Outfit shown above is Type N. P. R.—No. 41—other models heated by steam or electricity are described in our catalog.

It is portable—easily moved to any part of the shop—occupies but little floor space—a boy can operate it easily and make perfect repairs. The Shaler Patented System of Automatic Heat Control regulates it automatically. It must vulcanize just right. Can't overcure or undercure, and requires no watching or regulating. Large capacity. Repairs 12 casings and 200 tubes a day. Handles any style or size of tube or casing.

The Shaler Wrapped Tread Method of Tire Repairing

is used by all tire manufacturers. It mends casings and tubes quicker, better and at less cost. We furnish Complete Instructions with each outfit. So simple that anyone can do perfect work.

Ask Your Jobber—or Write for Catalog

of the Complete Line of Shaler Vulcanizers
for Repair Shops, Garages and motorists' use

C. A. Shaler Company, 362 Fourth St., Waupun, Wis., U. S. A.

(Oldest and Largest Manufacturers of Vulcanizers)

The
Inland patented
Spiral Cut makes
a mechanically per-
fect piston ring in
one piece.

The Spiral Cut
eliminates the gap
and produces a ring
that *uncoils* against
the cylinder wall, mak-
ing a perfect seal. Spe-
cial treatment of free
ends, makes the ring,
when compressed, a
perfect circle,
preventing end-
pressure.



The
uncoiling action
of the Inland *takes*
up wear on the cyl-
inder so that perfectly
even and perfectly
gas-tight pressure
is continually
maintained.

The Spiral
Cut also permits
making a ring of
equal width and
thickness all around—
no weak or thin places
—the strongest and
most durable con-
struction.

Dealers:
Inland sales are
now on a basis of
millions per annum.
Are you selling Inlands?
Jobbers everywhere
stock them—Ask yours.

Inland Machine Works
1645 Locust Street
St. Louis, Mo.

INLAND

A N N O U N C E M E N T

Smith Form-a-Truck Corp.
DEARBORN TRUCK CO.
 SUCCESORS

**The Biggest Deal
in the Motor Truck Industry**

Dearborn Truck Co. has purchased the business of Smith Motor Truck Corp., and Smith Form-a-Truck Co., comprising all materials and the good will of both concerns, valued at approximately \$900,000.

Combining the business of these three big motor truck concerns under the "Dearborn" name and guided by the steady Dearborn policy now gives to the transportation world by far the largest and most efficient Service Organization ever united under one head—large enough to render a complete service to more than 50,000 "Smith Form-a-Truck" and Dearborn Truck Units now in active service—representing without fear of contradiction—

"The World's Lowest Hauling Costs"

This great purchase deal by the Dearborn Truck Co., merging as it does the resources and organizations of these three big Truck and Truck Unit Manufacturers, now offers to Dealers and the truck buying public the most complete line of worm and chain-drive trucks and truck units on the market today.

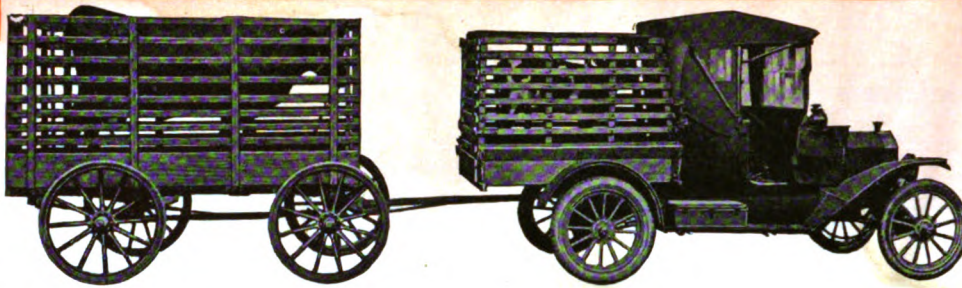
The Dearborn and Smith Complete Line Now Consists Of

Dearborn "Model F"—1½-ton Complete Worm-drive truck.....\$1980
 Dearborn "Model H"—2½-ton Complete Worm-drive truck (in production January, 1919).
 "Smith" Model A—1-ton Complete Chain-drive truck.....\$975
 Dearborn Model B—2-ton Complete Chain-drive truck (in production January, 1919).
 Dearborn—"Smith" Universal 1- and 2-ton Truck Units.....\$450 and \$550
 Dearborn—"Smith Form-a-Truck" 1- and 2-ton Units for Fords, \$400 and \$500
 Complete stock of "Smith Form-a-Truck" parts on hand for replacements.

DEALERS *You cannot afford to lose this wonderful opportunity for Big Business the coming year. Write or wire today for our liberal and exclusive dealer proposition. Action means you are aggressive.*

DEARBORN TRUCK CO.
 General Offices: 2015-2017 So. Michigan Avenue
 CHICAGO, ILL.
 Factory: 2515-25 W. 35th Street

Fill out and mail this coupon to us—TODAY—please
 DEARBORN TRUCK CO.,
 2015-2017 S. Michigan Ave., Chicago, Ill.
 Kindly mail me full particulars on your proposition.
 Name
 Address
 City State
 A. G. & A. D.



Farmers are just one of your many prospects who will buy MIAMI TRAILERS

The farmer has so many uses for a trailer he almost has to have one—and he wants a good one. Nowadays he is able and generally willing to buy the best.

MIAMI TRAILERS are substantially made to carry heavy loads at automobile speed, over all kinds of roads. A special shock-absorbing draw-bar relieves all strain on car or truck. Yet the prices are moderate.

Made in many styles, including several for various farm purposes.

*Write today and let us show you how
to sell the farmers in your territory.*

BE A
MIAMI
DEALER

MIAMI TRAILER CO
TROY-OHIO

WRITE
FOR
PARTICULARS



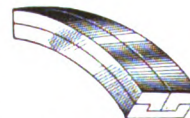
Have you a "Piston Ring Primer"
in your pocket? It has 16 pages of
valuable information. Free to you.

Ever-Tyte Bill

Says:- Well, it looks like it's all over
but the shoutin'—the huns
are licked—and as some
feller said "Liberty and Justice will prevail."

I'll tell you—"right is right and wrongs nobody"
"You can't keep a good man down" and whilst
some of us gets weak-kneed at times in a tight pinch,
there's always somethin' sort o' comes up inside of
you that stiffens up your back-bone and makes you
say to yerself, "one more good wallop will put her
over."

When you've got faith in
anything you kin "stick"—that's
the way I feel about Ever-Tyte
Piston Rings—they've made
good with me and that's the
reason I boost 'em.



RIGHT ANGLE
INTERLOCK

The EVER TIGHT PISTON RING Co.
1609 KINGSLAND AVE. SAINT LOUIS

AGAD-11-18

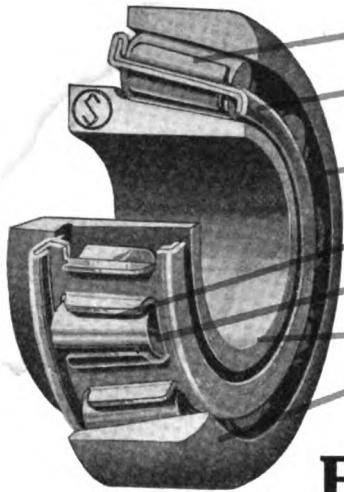
F.W.S. ROLLER BEARINGS

for FORD and CHEVROLET FRONT WHEELS



F. W. S. IMPROVED RETAINER

(Patent applied for)



- (1) **BROADWINGS OF CAGE** provide broad and smooth surface against rollers, so rollers cannot get out of line.
- (2) **STRONG CAGE** is secured by double walls of high carbon steel, outer edge reinforced by turned edge, giving three thicknesses at that point.
- (3) **DIRT PROOF:** Large diameter rollers and open cage prevent accumulation of dirt and avoid friction.
- (4) **MINIMUM FRICTION:** Large rollers minimize friction and wear, practically eliminating breakage.
- (5) **LUBRICATION:** The wings provide pockets to retain the grease, but accumulated dirt cannot pack in around the rollers.
- (6) **CONES AND RINGS** made of especially prepared steel properly tempered and ground to absolute accuracy in size and contour.

Satisfaction guaranteed.

F. W. STEWART

1402 Michigan Ave., CHICAGO

**DEALERS AND
GARAGEMEN:**

Write for Further
Particulars.



**PUT NEW LIFE
INTO
YOUR BUSINESS**
by selling
**Western Electric
Power and Light
and
Accessories**



You know the farmer and his ways—
You know storage batteries, other
electrical apparatus and gas engines.

You are the logical man to sell Western Electric Power and Light and
Accessories in the rural communities. A sales agency will prove profitable.

**If you are interested
mail the coupon today** →

Western Electric Company

195 Broadway, N. Y. City
Dept. 721

Kindly let me know more about the Power and Light sales agency
proposition.

A. G. A. D.-Dec.

191.....

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.



"NORMA" PRECISION BALL BEARINGS

(PATENTED)

As a potential factor in the performance of a car or truck, no part, no item of equipment is too small to deserve the most critical scrutiny. From least to greatest, throughout every detail of construction, one consistently high plane of service capacity must obtain, if the utmost security against failure and dissatisfaction is to be realized.

Makers of high-grade electrical accessories long since realized this—which explains why they have standardized their magnetos and lighting generators on "NORMA" Bearings, that their reputation and that of their customers might not suffer as a result of bearing failure in their machines.

Be Sure—See That Your
Electrical Apparatus
Is "NORMA" Equipped.

THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust and Combination Bearings.



AMERICAN GARAGE & AUTO DEALER

Published Monthly

TABLE OF CONTENTS

EDITORIAL.

Agitate Now for Road Improvements Next Summer.....	22
Stability of Retail Motor Vehicle Trade.....	22
Trailer Profits NOW	22

GENERAL.

The Dawn of a New Era	9
Local Shows Will Be Held; Chicago and New York in Line.....	10-30
Owners or Dealers as Showmen?.....	11-36
Know Everything There Is to Be Known About Your Business	12
Don't Be Afraid to Try New Things!.....	13
Haywood Firm Advocates Business on Cash Basis	13
Manufacturer-Dealer Helps, by Wm. S. Campbell	14-15
Metal Specialties Co.	15-16
Bergie National Spark Plug Co.	16
Your Silent Salesman, The Display Card	16
Whose Money Will You Pay Taxes On?.....	16
Accessories, by M. E. Faber	17-18-19
Alemite Lubricator Has Big Profit Possibilities.....	17-16
Present Fuel Conditions Demand Big Spark Power	18
Ellis-Smith Firm Moves General Offices to Elmira	18-19
Brad Sport Gloves Bring Winter Profits	19
Marvel Machinery Firm Helps Its Customers Increase Profits.....	19
Another Miami Trailer Type, New Model for Fire Fighting.....	21
One Truck Replaces 30 Mules Hauling Wheat	21
William Strong Wright	23
Qualities for Salesmanship	23
Vincent, Vindicated, Back at Packard Duties Again	23
Rims in Window Display of Bearings Service Firm.....	23
Hardware Men Succeed with Tires	24-25
Forecasts Big Tire Business	25
New Roller Bearings for Ford and Chevrolet Wheels	25
Penlings from the Pen of Dike, by C. H. Wooden	25
Dearborn Purchase Assures Service for Smith Truck Users.....	26
National Air Compressors Can Be Moved Around	26
Pioneer Wire Wheel Makers Win Success for Pasco Firm.....	34-42
Holmes Wrecking Truck Is Big Money-Maker for Towing Purposes	36
Cut-Out Swivel Joint for Jobbers' Salesmen	40
Eureka Engine Cleaner Works Without Splashing.....	40

DEPARTMENTS.

How to Make the Shop Pay	20
Welding, Cutting and Brazing	30-32
Accessories and Garage Equipment.....	38-40
Buyers' Reference	52
Index to Advertisers	53

American Garage & Auto Dealer, Inc.

General Offices:

116 S. MICHIGAN AVENUE
CHICAGO, ILL.

J. R. HASTIE, President

H. D. FARGO, Vice President E. C. HOLE, Vice President

E. T. CLISSOLD, Vice President

J. C. KELSEY, Secretary and Treasurer

EDITORIAL

R. B. JOHNSTON, Editor

Entered as second-class matter, March 1, 1916, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

Subscription Per Annum (Postage Paid) \$1.00. Advertising Rates on Request.

DENBY MOTOR TRUCKS

*Pioneer of
The Internal
Gear Drive*

Peace and Prices

THERE is a general expectation that the coming of peace and the consequent release by the Government of priority claims on materials will be followed by a sudden drop in prices.

This idea is based on a mistaken understanding of conditions, at least as regards products into which iron or steel enters largely.

The demands of the Government had nothing to do with the *price* of motor trucks; they affected merely the *supply*. Motor truck prices were determined by the two factors of cost of materials and cost of labor in assembling them.

Neither of these two factors of price will be altered for a long time to come. Given an open market for materials, and the cost is regulated by the law of supply and demand. One does not have to be an expert to know that scores of industries in the United States have been starving for iron and steel for a long time—industries ranging from baby carriages to buildings, from carpet tacks to motor vehicles. Supplies of the finished product in all these so-called non-essential lines are practically exhausted; the release by the Government of raw materials simply means a wild scramble for them, with price entirely secondary. And this is saying nothing of the enormous demands for reconstruction abroad.

Labor costs, too, will remain stationary. It should be remembered that the supply of labor on Government activities was only maintained by the most stringent elimination of outside work—and even then we were a million men short. Normal industrial work is clamoring for these men, at high wages, as fast as the Government will release them, or the men in military service.

Denby Trucks—and practically all other high grade motor trucks—have been reasonably priced. There has been no arbitrary inflation and so can be no arbitrary cut. Reduction of price can come only by lower cost of labor and materials—a thing that cannot come for a long time, if at all.

People who need motor trucks need them *now*. We are entering upon a period of high-speed industrial activity when fortunes await the swift and the efficient; but there is no place for the laggard. Success will come only to the concerns which get away on their toes to a running start and are able to maintain the pace. Antiquated delivery or haulage methods will be a handicap hard to overcome.

DENBY MOTOR TRUCK COMPANY—DETROIT



SPEE-DEE
WILL NOT INJURE THE SKIN
GREASY CRIMY GRITLESS
AUCY CARPETS CRITLESS
CLEANING DIRTY HANDS
WALL FLOOR
HARMLESS
CLEANSER
MANUFACTURED BY
STATES CHEMICAL

SPEE-DEE
CLEANS EVERYTHING
INJURES NOTHING
BIG CAN 25 CENTS

WASH YOUR AUTOMOBILE
Tops, Seat Covers,
Celluloid Curtains,
Fenders, Wheels,
Trucks, Buggies,
Machinery.

CLEANS
Rugs, Carpets,
Window Shades,
Painted Walls,
Woodwork,
Clothes, Laces,
Woolens, Etc.

SPEE-DEE

Our dealer helps keep the stock moving—

The motoring public knows the merits of SPEE-DEE. When you display one of our attractive posters identifying you as a SPEE-DEE dealer, you will find a large and consistent demand for it.

**Cleans greasy, grimy hands
without water**



This feature makes SPEE-DEE especially popular in cold weather. Gritless and harmless. It is equally efficient in cleaning and washing automobiles, trucks, etc. Quickly removes road oil, tar, grease and dirt of all kinds.

ASK YOUR JOBBER'S SALESMAN

Write us for full particulars.

**STATES
CHEMICAL
COMPANY**
680 W. Austin Ave.
CHICAGO - ILL.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. IX. No. 12

CHICAGO

December, 1918



♦ ♦ The Dawn of a New Era ♦ ♦

Local Shows Will Be Held; Chicago and New York in Line

Resolved, It is the unanimous sense of this meeting, as expressed by this resolution, that there never was a time in the history of the automobile business when the necessity for a well-conducted and well-advertised show was so great.

We find the consensus of opinion among the men who have come to this meeting, from twenty-four cities, is that there is at this time a lethargy among buyers of automobiles and a disinclination toward the buying of anything except the bare necessities of life. This condition is one which can be corrected by the proper advertising through an automobile show.

We also feel that an automobile show at this time will go very far toward stimulating business in other lines, bringing as it does to the various centers where shows are held dealers and prospective buyers from the smaller towns in country districts and holding before them the incentive to buy other things than automobiles.

We therefore urgently desire to impress upon all associations of automobile, truck and accessory dealers the immediate and urgent necessity for holding well-conducted and well-advertised automobile shows at the earliest possible dates at which arrangements can be made.

As the AMERICAN GARAGE & AUTO DEALER advocated editorially in the October issue there is general agreement that local automobile shows should be held all over the country. Enthusiastic agreement with this belief was shown at the meeting of the National Association of Automobile Show Managers at Cleveland, November 25 and 26 as the resolution above shows.

Among those in attendance at the meeting were Robert E. Lee, St. Louis; John L. Brock, Trenton, and E. E. Peake, of Kansas City, president of the show managers association, whose views on the show question in general were given in our November number as comments on the show question article written exclusively for the AMERICAN GARAGE & AUTO DEALER by Chester I. Campbell, manager of the big annual show at Boston.

The local trade associations at Chicago and New York are to run the forthcoming exhibitions in those cities, as the board of directors of the National Automobile Chamber of Commerce voted against holding the national shows in the two biggest cities of the country. The New York show will be staged at Madison Square Garden, long the scene of the big eastern affair. It is to be a double show, that is passenger cars will be displayed from February 1 to 8 and trucks from February 10 to 15.

It is expected that the Chicago show will be held a little bit later than the New York affair. The committee in charge of the show consists of George H. Bird, president of the Chicago Automobile Trade Association; C. R. Dashiell and Joseph F. Davis. The Chicago men have not yet selected the exact dates for their show nor have

they settled upon the building in which it is to be held. Some of the Chicago dealers advocate using the Coliseum, but others favor using a big building in State Street formerly used as a department store.

In addition to deciding that shows should be held, the show managers at their convention passed a number of resolutions regarding the kind of exhibitions that should be held, and they recommended that trade meetings be held, other business organizations asked to co-operate to increase the success of the shows, and that advertising should be started immediately, and be of aggressive character.

The resolutions passed were as follows:

Co-Operation.

Whereas, One of the greatest lessons that we have learned from the war is that united effort is all that counts, and

Whereas, It has been made plain and obvious that in the years to come no country, no nation, no community, no industry and no business man can remain aloof from their fellows but must co-operate, not only for collective profit but for individual profit, and

Whereas, The automobile shows as held in various cities have inured to the profit, benefit and good, not only of the automobile trade itself but of other businesses of the community,

Therefore, be it resolved, That in cities where shows are to be held that the members of the National Association of Automobile Show Managers, through their respective local organizations, bring about so far as possible a practicable and greater degree of co-operation between the organization conducting the show and other civic bodies of the respective cities, such as Retail Merchants' Boards, Chambers of Commerce and similar associations.

Resolved, That where necessary, and if necessary, there be called to the attention of these associations as well as the newspapers and similar institutions of the city, the benefits which the entire business and civic community derives from the holding of the modern progressive motor exposition.

Improved Exhibitions.

Whereas, The world is entering into a new era with new conditions, new ideas and new ideals, in which business will be different than it has ever been, and

Whereas, The automobile industry must maintain its position of leadership and present to the public an exposition of extraordinary merit, in keeping with the new era now dawning, and

Whereas, All business has come to look to the automobile industry for the exposition of new ideas and progressive principles,

Therefore, be it resolved, That in such communities in which automobile shows are held the constituent members of the National Association of Automobile Show Managers bring about so far as possible through their various organizations, expositions that will in every respect portray and express the new conditions and the progressive ideas.

(Continued on page 36.)

Owners or Dealers as Showmen?

"Assuming that we have a Motor Association composed of owners and a trade association of dealers, by whom should an automobile show be held and managed? The writer is one of the committee to try and decide the above question, and would thank you very much for your opinion."

The point raised in the above query is one that was much discussed in the early days of automobiling. It has come to be the general opinion, however, that shows are best handled by dealers, and this is now the condition practically all over this country.

To be sure our first exhibition of motor vehicles—they called them "horseless carriages" mostly then—was held by the Automobile Club of America in New York nearly twenty years ago. For a number of years thereafter the Automobile Club of America had at least a part in the promotion and management of the New York automobile shows. But the manufacturers, that is the trade—rather than the owner element as typified by the big New York City club—has ruled the destinies of the big eastern exhibition for more than a dozen years.

Clubs Held First Shows.

In a number of other larger cities this experience was duplicated. The first shows to be put on were promoted and conducted by automobile clubs. Later the shows were taken over, not always with absolute good will in the relinquishment on the part of the club members, by the dealers acting either as trade associations or especially organized exhibition corporations.

When shows were first held it was quite natural that the affairs should be run by owners because cars were very high priced as well as very few in number, and the agents in those days seldom had vehicles in their possession long enough to use them for display purposes solely for an entire week. In fact, when the trade-held shows were first put on quite a few of the dealers borrowed cars from their customers in order to display them during the exhibition period.

One of the reasons for the vogue of owner management of shows in the earlier days was the fact that these affairs were run more along the lines of a social function, such as a horse show, rather than as a display of merchandise arranged for the purpose of increasing the business of the exhibitors. With many of the vehicles displayed at the early shows being imported cars costing all the way from eight to fifteen thousand dollars, at least so far as most of the big cities were concerned, the social rather than the business element was naturally most in evidence.

Another thing about these early shows was that the clubs were financially able to guarantee the expense of arranging and conducting the shows while the trade, apart from the national shows in Chicago and New York and those held in a dozen or so of the largest cities, had neither the organization nor resources necessary to put on these affairs. There were not many dealers then, trade

associations were few and seldom strong financially so that the owners of those days did the pioneer work in automobile show promotion, and thus are entitled to much of the credit for laying the strong foundations upon which the automobile industry rests today.

But when cars became simple enough so that most any one could drive them, and did not have to be wealthy enough to employ a chauffeur, and the number of makers and consequently the ranks of the dealers were multiplied, many clubs lost their interest in show promotion. These affairs naturally became less interesting to club members as social functions, because of the much greater number of folks able to buy and run cars.

Dealers Could Get Show Cars.

Another reason for the trade taking hold was the fact that as these affairs took on more of a business aspect the dealers wished to have them conducted along lines that would bring in the greatest possible number of prospective purchasers, regardless of the social standing of these visitors. Also the dealers had what might be called the deciding voice of the question, because only through them would the manufacturers send new models or show cars for display.

Most of the clubs have been glad to give up promoting and conducting a show. So much work is necessary, and the clubs being run largely by officers with other and more important interests of their own, the organizations were forced to hire temporary staffs to look after the show details. With the multiplication of exhibitors and the resulting increase in the troubles of the show manager the task of obtaining capable staffs for the short periods increased greatly. On the other hand when members of the trade run automobile shows they are able to divide the work up among numbers of committees, made up of members willing to devote a portion of their working time to the tasks assigned to them because the work will help them in their business. For this reason they do not regard it as an imposition, as might the busy men of affairs who would be appointed in the event that an automobile club were to put on a show.

One of the most important things to consider so far as deciding this owner or dealer show management question is the fact that the advertising of cars paid for by dealers is one of the biggest factors in bringing success to these affairs. It is natural to suppose that dealers would take more interest in a show being conducted by the trade, and be willing to spend more money in advertising the show and their own merchandise than if the affair were run by an organization of owners.

Dealers Advertise Shows.

Dealers help make a show successful not only through the expenditure of a good deal of money in newspaper advertising, but they also call the attention of their customers to the forthcoming exhibitions and in quite a number of cases buy blocks of tickets which they present

(Continued on page 36.)

Know Everything There Is To Be Known About Your Business

Don't be ashamed to do the little things—the little things while seemingly of small consequence, are frequently very important. If you are the mechanic in the shop, know your business or job so thoroughly that there will be no one else in your garage or repair shop that can do your work quite so well.

If you are the "boss" or proprietor, it is absolutely essential for your BIG SUCCESS that you *master everything about your business*. You must be so intimately acquainted with all of its problems that you will know just wherein and how you are making money or losing money, and *most important*, discover ways and means for making MORE MONEY.

Whether you are in a 2 cylinder, 6 cylinder, or 12 cylinder place makes no difference—all of your cylinders must be working right or co-ordinately, if you are to get the most out of your business.

There is a constant ascendancy and descendancy in business. Some men are going up, others are coming down. WHICH WAY ARE YOU GOING?

Are you headed in the right direction? Is your place of business in a progressive street? Is it in a good location? Are you attracting business? Are people stopping at your place? These important points come under the head of "KNOW EVERYTHING THERE IS TO BE KNOWN ABOUT YOUR BUSINESS."

The success of the United Cigar Stores is largely attributable to the scientific manner in which they determine the suitability of store location. Quite frequently men in this organization may be seen standing at different corners, counting the passers-by at certain hours to determine if a contemplated location is in the "avenue of trade."

There are many things about your business which you should know, if you do not know, and he who can familiarize himself with all the departments of his business, conserves and increases profits.

KNOW HOW TO SELL YOURSELF TO YOUR TRADE! Know how to make satisfied customers! Know how to make your trade repeat or come back! Know how to get new business! Know how to increase the sale of accessories! Know how to sell more trucks, and STILL MORE TRUCKS! Know how to increase your passenger car business so that it will be larger than for any previous year!

Know what your customers want—it is a very wise salesman who can anticipate in advance, the requirements of his trade. Know if your customers are interested in trailers, farm lighting plants, truck units! Don't be afraid to write letters, to telephone, to advertise! Don't be afraid to get out and hustle!

Many garagemen, repairmen, and automotive dealers are only running on half power *simply because they are*

in a rut. Some business men are afraid to acknowledge that they are in a rut, but those who admit it and get out of the rut, are the business men who succeed.

Many years ago in Ohio there was a man who was scoffed at because of his eccentricities. He was fond of bees. He read all the books, magazines, literature, and other information that he could get on bees. Finally he decided to go into business and specialize on bees. People thought him crazy, but today, when finished results are looked at, this man has built up a business representing an investment of more than a million dollars, and *he owns it all*.

Regardless of whether yours is a garage business, repair shop, or agency for trucks, passenger cars, or trailers, get wise and "KNOW EVERYTHING THAT THERE IS TO BE KNOWN ABOUT YOUR BUSINESS."

As Henry L. Doherty says: "Too many men neglect to study their own line of work, because they are more interested in something else—something that gives them neither financial nor intellectual profit. One trouble is that the average man does not know what is a full day's work. What seems a full day's work to the employee may not seem so to the employer, but if the employee is honest with himself, he will do such a good day's work that it cannot help but be noticed. Hard work does not always bring advancement, but when an employer is looking for a man to push ahead, he does not choose the poorest workman or the average workman, but the BEST."

Mr. Doherty practices what he preaches. He has created a national reputation for himself as a business man because of his talents, which include a thorough knowledge of his business.

Set your imagination to work—let your imagination be a kodak—picture other people in your mind—try to see them as they are—try to discover what they want.

Now with extraordinary business opportunities ahead of you, every garageman, repairman, and automotive dealer owes a tremendous obligation to himself to thoroughly master every problem about the business that is worth while. Those who do this will reap the golden business harvest from the seeds of study, hard work, thoroughness, ambition, service, progressiveness, up-to-dateness, carefulness, and unselfishness, which they have sown.

The man who goes forward to his day's work simply because it is "his job," and he must have the wherewith from it to pay for his grub and shoe leather, will never climb very high. Any man who hopes to succeed must thrill to the joy of his job. It must be to him the thing he enjoys doing most on earth.

Don't Be Afraid to Try New Things!

"Teacher, I know how to do that" And the little lad did. He thought he did—he was not afraid to try something new, and his nerve, coupled with thinking that he could do it, did it for him.

How true this is of everybody that hesitates or does not hesitate to try new things.

Possibly you have refrained from taking on an agency for trucks. Probably you thought that it would be too much for you. Don't get cold feet—don't lose your nerve. It does not pay. If you think that you cannot do a thing—you *can't do it*, but if you think that you can do a thing, and are willing to try, you will be surprised how easy the task can be accomplished.

You may have lost thousands of dollars of profit by not tackling a truck agency, or because you have been afraid to listen to the salesman that were introducing farm lighting plants. Probably you thought they were trying to sell gold bricks to you.

It is admirable to be conservative up to a certain point, but it does not pay to be too conservative. There is a very happy or wise balance.

Several years ago when the trailer was first introduced on the market, many automobile dealers were afraid or hesitant to sell trailers, thinking that there would be no demand for them. But those who had the foresight or the courage and nerve to sell trailers have made big profits.

Don't envy your competitor—don't gaze out of your window across the street into his store and wish that you were as successful as he. The reason that he may have succeeded and you are struggling along is that he has

always had the nerve to try new things or to tackle new stunts.

It is simply an attitude of mind. If you think that YOU cannot do what others are doing so successfully, you are simply crumbling your fortresses of courage, and of course you can't do it.

Some men in the garage business or who are automobile dealers have started in previous years with practically no capital. But capital is not difficult to obtain if your banker knows that you are a "hard-headed business man"—hard-headed in the sense that you are courageous, ambitious, careful, alert, enterprising, strong—and not hard-headed in the sense that you may be weak in mind or vacillating, or afraid to go ahead and tackle new things, new problems that mean increased business for you.

If it is your candid opinion that you ought to have a new building, put up a new building. Make your plans—then carry them out. If it is your idea that in your particular city you should have the biggest garage business or sell the most trucks, passenger cars, trailers, etc. **SELL THE MOST. "DON'T BE AFRAID TO TRY NEW THINGS."**

If others hitherto felt the same way, we would have had no adding machines, typewriters, automobiles, trucks, airplanes, railroads, steamships—we would have had nothing.

Courage, which is the nerve to tackle new problems, new ideas, new money-making stunts, is the latch-key that will open the vault door to where you will find concealed everything that your heart may desire in respect to increased profits, and an enviable prestige.

Haywood Firm Advocates Business on Cash Basis

Some convincing arguments for putting business on a cash basis are given in the December issue of The Haywood Traveler, which is issued by the Haywood Tire & Equipment Co., Indianapolis, under the heading, "The Haywood Policy," as follows:

"Do you know," said one of our Indiana customers while in here the other day, placing an order for tire repair materials, "I heartily agree with you about the cash policy. In fact, my business has been transacted on that basis for the past ten years.

"Ten years ago I paid a bill—twice. It wasn't a large bill, but I didn't like the idea of paying it more than once. Right then and there I told the man to whom I paid the money our future transactions would be on a cash basis.

"While thinking it over, I became more and more convinced that an all-round cash basis would not only prevent mistakes of

this kind, but would actually save me money, and although my friend returned the amount I had overpaid him—having found the mistake—or because his conscience hurt him—it didn't change my mind.

"I just told my wife that this family and this business were going on a cash basis immediately, and for her not to buy anything from any of the stores on time. I even went around to the men with whom I did business and informed them of my decision, instructing them not to sell any of my folks one article on credit.

"I paid my outstanding bills. I remember giving the hardware man about \$14, the dry-goods man about \$11, and so on. They laughed at me and tried to 'kid' me out of it, but nothing doing! I had made up my mind and was determined to see it through.

"Lose any customers? I should say I didn't. Instead I have gained customers, and at the end of each year I have had more money in my cash register than I could possibly have had through extending and asking credit."

It may take some time for you to get your own business on a cash basis. Some of you may even retain a few "open accounts" on your books, but you know your own trade best and it is up to you.

We want to make this an opportunity for thanking you for your co-operation and for your ready acceptance of the Haywood policy. Haywood's cash policy has been in effect about a month now, and the results, we are glad to say, have been very gratifying. The boys realize that this is the best way of doing business, and, as far as we can ascertain, we haven't lost a single customer on this account.

A great many of you have shown your appreciation of the low prices we have quoted you on materials by placing large orders for supplies.

We have endeavored to take care of your orders during the past months as promptly as possible, but they have been coming in so fast it has kept us hustling. We shall be able to do even better during the coming month.

MANUFACTURER - DEALER *Helps*

BY WM. S. CAMPBELL,

Advertising Manager,
Miller Rubber Co.

At the outset, let me state that in my opinion "Dealer Co-operation" is often a misnomer. It is frequently confused with "Manufacturer's Co-operation." Just why everything in the way of factory help for the dealer should come under the heading of "Dealer Co-operation," I do not know. The phrase was undoubtedly used in the beginning with the idea that the dealer would reciprocate whenever he received help from the manufacturer and therefore "Dealer Co-operation" would be established.

Such things as store signs, window displays, folders, etc., are accepted dealer arrangements that come under the classification of "Dealer Co-operation," but they simply manifest a spirit on the part of the manufacturer to co-operate with his dealer.

In fact, "Manufacturer's Co-operation" has been carried to such an extent that nowadays the manufacturer must always keep on hand vast stores of literature, signs, and so on for the benefit of his dealers. It is frequently the manufacturer who suggests to the dealer that the latter move off the side street to main street, pay double rent and do triple business. In other instances, he starts up a set of books for the dealer and shows the dealer how to keep them posted up to date.

He sends solicitors out in the dealers' territories and they dig around and get business which goes on the dealers' books. All of this is known as "Dealer Co-operation." As a matter of fact, isn't it strictly "Manufacturer's Co-operation"?

Maker Advised New Location.

Over in a Pennsylvania town one of the leading tire dealers in that section of the state started in the Miller business four years ago \$3,000 in debt. The firm had practically no financial backing and all it had to guarantee success was indomitable courage on the part of its members and co-operation on the part of the factory. After we had investigated the location of their plant we advised them to move onto Automobile Row. We knew that it would cost them three times as much rent in that district, but we also knew that they stood to get more than three times as much business.

In the brief four years since they moved onto Automobile Row they have built, out of their own profits, a handsome four story sales room, vulcanizing plant and warehouse. Today that concern does close to a quarter of a million dollars' worth of tire business a year as well as a large jobbing business in automobile accessories.

There is a small Ohio dealer who comes into the factory once a week with a truck to load up his tires and take them from the factory to his place of business. This fellow makes his headquarters in the advertising department and that shows more impressively than anything else the cordial relations existing between our advertising department and our dealers.

In Buffalo, one of the largest dealers in the county, while he is in a position to take care of all his advertising requirements within his own organization, calls on us frequently for co-operation in the way of designing attractive letterheads, Christmas cards, artistic folders, etc.

In the case of the Miller Rubber Company, the whole plant spells co-operation. Every big department in the institution, including Traffic, Shipping, Sales, Cost, Book-keeping, Advertising, etc., is at the service of any dealer who wants help. Even the highest priced men in the company are at the service of every dealer—whether the dealer buys \$50,000 worth of tires or \$50.00 worth of tires.

The Miller Company feels that a tire is never completely sold until assistance is given the dealer in moving the stock, that he has purchased from the factory, from his sales room. A large amount of money is, therefore, expended in the maintenance of an extensive advertising organization and promotion department. Besides the daily newspapers we use such mediums as the Saturday Evening Post, Metropolitan, Colliers, farm journals, American Magazine, Christian Herald, Cosmopolitan, Scientific America, etc. Consequently a wide acquaintance with the public is given Miller tires and the dealer who takes on the line takes on a product already known throughout his territory.

New Dealers Welcomed.

"Miller co-operation with the dealer" begins the minute the factory is notified by a salesman or branch that a new account has been opened. An assortment of advertising, consisting of folders, signs and banners, is shipped at once. A hearty letter of welcome to the Miller family is also sent to the new dealer from the Sales Promotion Department.

The letter sent out by the Promotion Department also suggests other lines of advertising co-operation and asks for an expression from the dealer as to which method he thinks will be most effective in his own territory. The proposals made may include newspaper advertising, poster work—in fact, anything that is most adaptable to the dealer's requirements.

The advertising material is sent out direct from the factory. It includes newspaper electros, movie slides, window displays, banners, signs, literature of all kinds, stationery, garage suits, road signs and balloons, together with other items.

Although much of this advertising is furnished free, some is charged for in order that part of the expenses of issuing it can be turned into other channels. In other words, if we get part of the cost out of an item like balloons, we reflect say 25 per cent of its original cost, which we can again put back into a flange sign or canvas banner, thus making our line wider and more useful.

In making out a list of plunder for dealers to use in creating good will and putting their name before the

public, many times manufacturers will trespass on grounds that are not altogether productive. We refer particularly to instances of novelties which in some cases are expensive as an individual item and don't carry the lasting qualities that their cost would warrant. The selection of such media should be very careful and directed only towards paying and permanent publicity that will have some financial return in the way of increased sales.

We have a nominal charge for some items such as road signs, letterheads, electric window display signs, garage suits and toy balloons, but the cost to the dealer represents but a fraction of the manufacturer's cost of such items.

Newspaper Campaigns Are Planned.

In connection with newspaper advertising, the factory does much more than the mere furnishing of electros. It arranges a complete campaign with the local newspaper and handles all the details for the dealer. In many instances it also pays part of the cost of the campaign. The sales letters to the car owners in the dealers' territory are all handled in detail by the factory. All the dealer has to do is to send in his list of motorists. The factory takes into consideration the local conditions in the dealers' territory and then prepares multigraphs on a special letterhead, and mails out all the matter for the dealer.

Advertising balloons have been found to be one of the most popular items with Miller dealers. They are furnished in assorted colors imprinted on one side with a Miller advertisement and on the other side with the name and address of the dealer. All of this co-operation on behalf of the dealer is backed up by our extensive campaign of advertising in national magazines, farm papers, newspapers and painted billboards.

During 1918 we advanced one central thought to dealers and car owners. Like the car manufacturer who didn't know he had a *passenger* car instead of a pleasure car until Washington found it out (while we were at war) we did not know of the uniformity of the manufacture of Miller tires until we stumbled across it. We found that our system of precision in the factory had taken root and was thriving huskily.

Our tire builders would set about their work with clock-like accuracy, either matching or being a worthy rival to the machinery designed for other than hand work. Considering the fact that tires are mostly hand work, no matter how made, this accuracy on the part of tire builders was very necessary. We decided that there should not be the vast difference of mileage in tires when four of the same make were put on a car. Before one would go 5,000, another 10,000, another 8,000 or probably 6,000. The tires all contained the same volume of rubber and the same kind of fabric, were all the same weight and built in the factory by the same men. There was no accounting for this vast difference in mileage until we instituted our uniform system of building.

Inspectors were picked from the ranks of tire builders and paid according to the seriousness of errors they found. This made keen rivalry among the men who were rated according to their work. If ever a tire came back, the man who built it was penalized. The only real

way to penalize any man is through his pocketbook. We found that building tires according to this uniform method would only permit limited quantities being made. When you increase workmen you increase variables, so we decided to limit our output, but keep it uniform.

In our Cord Tire Department, each builder had ten years' training and represented the old school of hand builders in so great demand before machinery was invented. Many believe "the accuracy of machinery does away with human invariables." We believe it also, but tires contain hand work and are subject to accuracy of building according to the temperament of the builder. Today that department has developed into a very efficient body of tire builders.

Only about one man out of twenty-five who applies for work in that department when put to work makes good. The others can't stay. The standards are too rigid. The system too fine.

Tire Builder on Window Card.

A large picture of our expert tire builder was used in all our advertising this year, being placed as a window cutout, and being represented in every piece of advertising literature and reflecting right to the dealers' and consumers' doors this idea of uniformity of Miller products.

Only picked dealers could handle these tires we made. Those dealers had the advantage of representing to their customers this master tire builder.

The dealers handling Miller tires were selected for their good business principles and uniformly good business methods of handling their trade. The dealer was swallowed right up into the uniform plan which was promoted to car owners through the biggest magazines in the country and forcefully called to their attention through painted billboards and all other methods of direct advertising.

The dealer who was fortunate enough to be in the wake of this sweeping and onrushing hords of Miller advertising certainly reaped a golden harvest. Those in front of our mass of publicity had real competition.

Metal Specialties Mfg. Co.

We furnish to dealers, newspaper electrotypes upon request; and we also supply all jobbers, who get out a catalog, with a complete set of seven full page plates, showing our entire line of Presto Automobile Accessories.

These plates are made up in two different sizes over the type matter—5 by 8 inches and 6 by 9 inches—which make it possible for the jobber to use them on all ordinary size catalogs by varying the width of the margin around these plates. These catalogs are bound in pamphlet forms, so that the jobbers' salesmen can carry them and hand out the sheets separately to the dealers if they so desire. The salesmen find it very convenient to have these separate pamphlets, especially when the full lines do not happen to be shown in the catalog which they are using to sell from.

In addition to the above, we make up three different

sample boards of convenient size for window display—22 by 28 inches—with different articles mounted on each, which taken collectively show enough of our line of Presto Automobile Accessories to give any purchaser a good idea of what they want.

We also furnish gratis to jobbers and dealers thousands of printed pamphlet circulars, envelope size, for inclosures in their mail. We find that this is a quick way of getting a new article advertised to the dealers throughout the entire United States in a very short time. As we operate our own printing plant for this purpose, this of course, reduces the cost of this expenditure to a minimum, and we find it very profitable. No one can afford to be stingy with advertising matter, if he expects his products to be quickly and universally advertised.

This form of advertising is, of course, supplemented by full page advertisements in the leading magazines read by consumers and dealers throughout the United States and Canada.

L. W. GOLDER, Secretary.

Your Silent Salesman The Display Stand

I'm on duty when the store opens up in the morning and I'm still on deck when the help all quit at night.

With my many brothers and sisters I do at least one-half of the work the sales force is hired for and paid for doing.

I make my mute appeal respectfully and intelligently, and I never talk back to or provoke a customer.

I have a single track mind; I can only do one thing—that is, sell goods; but, like a specialist should be, I'm a superior workman in my line.

I like a front row position and I court attention and kind words like a house cat. The closer I am to the customer, the louder I talk.

I'll agree to work only regulation store hours on your counter or show case. But, O my! if you will give me show window duty, I'll "carry on" for you twenty-four hours a day and seven days a week for nothing a day and at the same rate for overtime and Sundays.

I'm ready for work now. Just show me where to hang my hat.

By the way: I've got several brothers, who look just like me, who are idle now. I think that you could use several of them around your place, as you appear to be short of help here. They will make work easier and life brighter for the help you have to pay and they'll work on my terms.

We also can give your traveling men a lift if they'll tote one of us around. But we must get "a show" and a chance to talk to every customer they call on. We are not bashful, neither are we forward. A proper introduction from a mutual friend helps out a lot, though.

If you want more of us to come on here and work for you, just write my boss, Jack Kelleher, who is manager of The Stenman Electric Valve Grinder Co., 42 Southbridge Street, Worcester, Mass., and tell him how many of us you want.

Thank you, also much obliged.

Respectfully yours,

COUNT R. DISPLAY CARD.

This little sermon on the use of counter cards is sent out with a neat counter display showing a Stenman valve grinder.

Bergie National Spark Plug Co.

The Bergie National Spark Plug Company supplies its dealers with folders, booklets, broadsides, window display material, cutouts for counter display, and also a very interesting demonstration outfit to be used on a counter or in the window. The demonstration outfit is illustrated herewith.



The co-operation which National spark plug dealers like perhaps the most is the guarantee by which the factory authorizes them to make replacements for defective plugs. While the National plug is fully guaranteed it is surprising how few defective plugs are returned for replacements.

Frank M. Comrie, Advertising Counsel.

Remember that regular hours of sleep, regular meals of wholesome, plain food, association with successful people, and reading the helpful literature relative to your own business, will all help you put across bigger deals and more of them.

WHOSE MONEY WILL YOU PAY TAXES ON?

Do you know that the income tax assessor is instructed to tax you on your book accounts? If your ledger shows a charge against a customer at the end of the year you have to pay a tax on it. There is only one way to escape and that is to charge off the account to profit and loss.

When you carry a customer's account beyond the due date you are lending the customer money that if invested would bring you six or seven per cent. In the first place you are losing that interest. For every thousand dollars on your books you are out at the rate of seventy dollars a year. Besides this, the Government is going to tax you at the rate of two per cent, which amounts to another twenty dollars on each thousand dollars on your books.

If you have a thousand dollars outstanding you can make pretty good wages by taking a week off and getting the money before December 31. Charge off what's dead—don't increase your expenses by paying taxes on money that you're never going to get.

ACCES\$SORIES

BY M. E. FABER.

What's your answer to the smooth salesman who comes along with an accessory that you have never heard of before and offers you a big discount or some other special inducement to "introduce" it?

He makes it appear as if his big discount is the same thing as a big margin of profit. He argues that instead of spending huge amounts for advertising, his firm is going to give it to dealers in the form of increased profits. He tells about the terrible expense of advertising—how it costs thousands of dollars for one ad in some magazines. When he gets done he would have you believe that your prospective big margin of profits is almost going to make your customers fall over themselves to buy the article.

You've met this salesman and his merchandise, haven't you? Maybe you bit on his proposition. Most merchants do—once. Hardly an accessory stock is without some items that have done nothing but gather dust for one season after another.

It is significant that usually these articles are imitations or infringements of some standard accessory. Motorists have no confidence in them or the desire for the article has never been created. The manufacturer was well satisfied when he had made his initial sale to the dealer. He made his quick clean-up and Mr. Dealer holds the sack.

How are you going to size up an accessory anyway, and protect yourself against the loss that an indiscreet purchase may cause you?

How to Protect Yourself.

The safest method is to confine your buying, so far as possible, to a few reputable jobbers. The jobber has facilities for finding out the standing of a manufacturer and the merit of his product. Few jobbers will handle any article the first season it is placed on the market or one that is not perfectly safe for you to buy. The jobber's salesman calls on you often and he won't sell you anything that is likely to spoil his welcome.

Beware of the article with the long discount. An extravagant discount is an almost certain indication that the burden of selling is up to you alone. Remember all the time that discount doesn't become profit until the goods are sold and your customers are satisfied with them.

It is far better in the end to make a margin of 25 per cent on the selling price of an advertised, reliable article that sells rapidly than a 50 per cent margin on an imitation or substitute—better for you from the standpoint of net profits, and better for your customers.

Nine times out of ten you will make more profits on the advertised article because your customers will accept it on its own reputation without any urging or personal guarantee on your part. They will see it on your shelves or in your window and say, "Let me have one of these, too. I've heard it's O. K."

Bigger Profit But Smaller Percentage.

Ultimately your actual money profit will be bigger in spite of the fact that your percentage profit is smaller. You will make more sales on smaller investment—and that's the foundation of every merchant's success.

The honest article, well advertised, *must* make good. The manufacturer doesn't advertise for the pleasure of seeing his name in print but to sell his goods. The fact that most manufacturers who are building permanent business keep continually telling the merits of their goods to the public means only that they have learned that advertising is a more economical way of selling the goods than any other. It guarantees to the user that the article must be good enough to stand the searchlight of publicity, and that means easy, customer-satisfying sales for the dealer.

Advertising is public reputation. Advertising can't make a permanent success of an inferior article. Any article that has been continuously advertised for a reasonable length of time is pretty sure to be a profitable seller.

Buy national advertised goods—buy them from your jobber—display them all the time where your customers can't help seeing them.

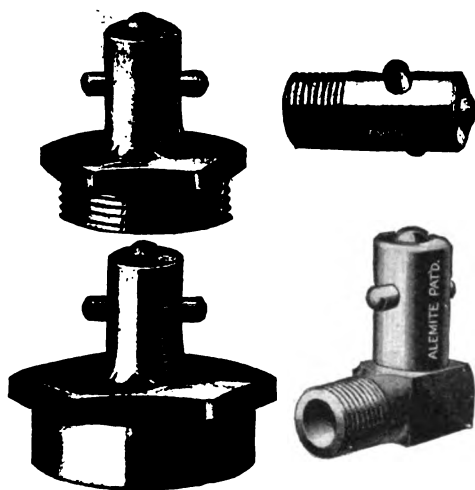
ALEMITE LUBRICATOR HAS BIG PROFIT POSSIBILITIES

Automotive merchants who take up the task of selling the Alemite lubricator should have smooth sailing toward a sea of profits, for this equipment is a time and labor saver for drivers of cars, trucks and tractors. The Alemite folks declare it is possible to complete in 15 minutes the lubri-

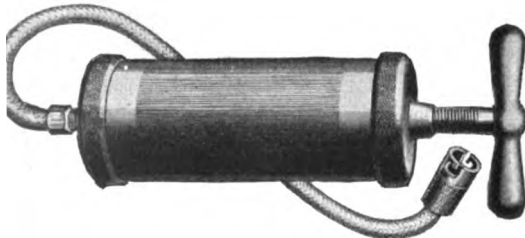
cation of 30 bearings with their outfit—a little chore that requires about two hours when grease and oil cups must be dealt with. While this estimate may be a bit enthusiastic, there is no doubt that the Alemite lubricating system will prove popular with motor vehicle operators, as the job can be done without soiling hands or clothing.

The system consists of a compressor and a number of ball-check valve nipples of various sizes, both straight and elbow. The compressor is a steel cylinder, knurled to prevent turning in the hand. A 15-inch flexible steel hose ending in a bayonet coupling is attached to the compressor. The nipples are substituted for the old grease and oil cups and plugs and are screwed in

all places requiring lubrication. Where cars are fitted with grease cups integral with the shackle bolt, new caps and nipple complete are furnished to replace the original ones.



When the nipples are in place the lubrication is done by hooking the bayonet coupling over the nipple with the steel projector opposite the coupling slot, then by a slight pressure forward and a turn to the right a tight joint is made. Then the grease can be forced into the bearings with pressure enough to force the old grease out and deliver fresh lubricant to the parts subjected to wear.



By wiping off the end of the nipple before making the coupling dirt is kept from entering with the grease. The system can be used for spring shackles and bolts, steering knuckles and rods, universal joints, fan bearings, water pumps, clutch collars and steering worm housings. Readers who write to the Alemite Metals Co., 341 West Chicago avenue, Chicago, and mention the AMERICAN GARAGE & AUTO DEALER will receive full details and trade prices.

PRESENT FUEL CONDITIONS DEMAND BIG SPARK POWER

The high cost and varying quality of gasoline, with a tendency to slow, lazy ignition, necessitates rapid fire, hot spark, big power, spark plugs. A small weak spark produces a weak explosion and therefore wastes fuel and power.

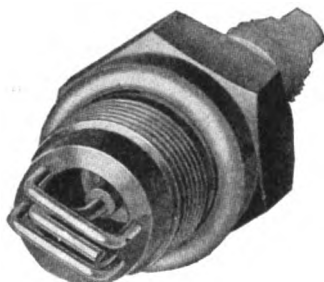
If combustion is not rapid, the efficiency and power of the motor are reduced accordingly. If the electric spark is not hot enough, the combustion is not complete, and it fails to burn up all the oil

and carbon, with the result that carbon deposits form on the spark plug points and in the cylinders with a corresponding waste of fuel.

National spark plugs are designed especially to meet the demand for an efficient spark plug, with big spark power electrodes that will ignite low grade fuel satisfactorily. The patented one inch firing surface gives 7 to 10 hot, fat sparks, so powerful and intensely hot, that they ignite the fuel instantly.

This crackling shower of powerful, hot sparks, rapid and continuous, insures positive ignition, complete combustion, and continuous service. Carbon troubles are practically eliminated and there is a great economy of fuel.

The heavy firing wires are designed to give satisfactory service for all heavy duty requirements of air, land and water service. A recent test of National spark plugs by one of the largest oil producing companies in the United States, demonstrated that the National was the only spark plug that "stood up" under the heavy duty requirements of a casinghead engine. As a result of this test the National was adopted exclusively for use in all of their plants throughout the United States.



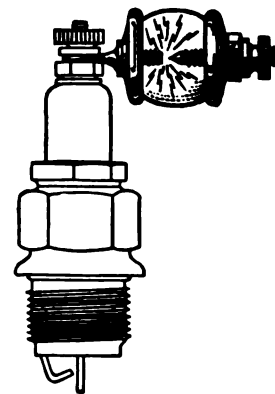
After rigid competitive tests by ignition experts National spark plugs have been selected for use in marine motors, airplanes, automobiles, trucks, tractors, and stationary engines, and have been commended highly for their satisfactory service.

National spark plugs are entirely different from any other type of spark plug, and are constructed on an entirely new principle of ignition, fully protected by basic patent. They have been rigidly tested in actual service, and competitive tests have demonstrated their superiority in efficiency, dependability, durability, and economy of fuel.

The Bergie National Spark Plug Co., Rockford, Ill., manufacturers of National spark plugs, will mail to any reader of the American Garage and Auto Dealer upon request a copy of its folder "Big Power Spark Plugs" and descriptive literature.

UNIVERSAL INTENSIFIERS REDUCE PLUG TROUBLES

Many dealers who have accessory departments are finding a ready sale for Universal spark plug intensifiers which are distributed by many of the big jobbers. The makers declare that the Universal overcomes spark plug troubles, and make a plug foul with grease or carbon or with a broken porcelain fire perfectly. The intensifier is attached to the spark plug as shown in the accompanying illustration. If the magneto is not working properly, a wire short circuited or broken, or the batteries out of order a driver can tell instantly by raising the hood and watching the sparks in the small glass cylinder.



The intensifier has adjustable terminal points set in a bull's eye cylinder of glass which magnifies this spark and causes a clear vision from every angle. If the ignition system is weak the hexagon nut on the side to which the terminal is fastened should be loosened and a slight turn given to the screw to partly close up the space between the two points in the glass cylinder.

The intensifiers are adjusted to suit the greatest number of cases. The usual distance is about 1/64 of an inch, but this may be increased to 1/32 or even to 1/16 if the voltage is high enough to jump the gap. It is declared that the intensifier saves gasoline, prolongs the life of the spark plugs, gives more power and eliminates carbon in cylinders. Readers who wish further details and trade prices can obtain them by writing to the Universal Mfg. & Sales Company, 552 West Harrison street, Chicago, and mentioning the AMERICAN GARAGE & AUTO DEALER.

Ellis-Smith Firm Moves General Offices to Elmira

The Ellis-Smith Mfg. Co., formerly located in Buffalo, N. Y., has moved its factory to Monroeton, Pa., and its general offices to the Merchants National Bank Building of Elmira. This firm has built up a very substantial business, in the behalf of its combination jack, which is a garage jack and turntable.

H. L. Smith, who is the general manager, will be very glad to confer with interested owners of garages, repair shops,

ACCESSORIES

and service stations, and upon request will be pleased to send descriptive literature giving further particulars, if the AMERICAN GARAGE & AUTO DEALER is mentioned.

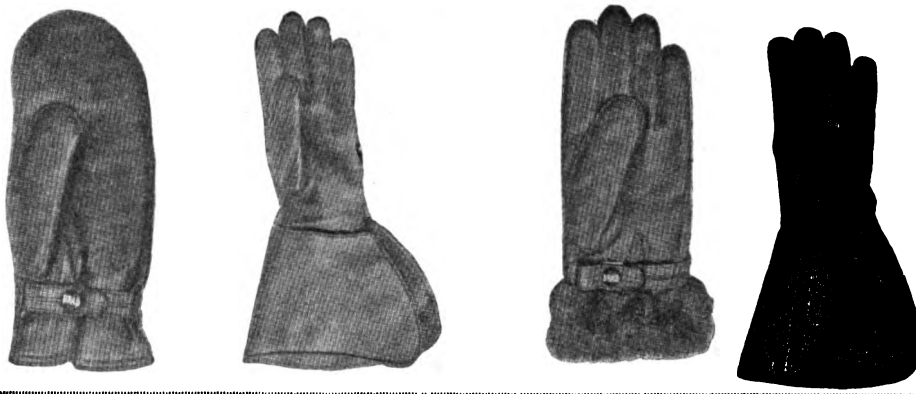
kinds designed for riding, driving, fall and winter sports, as well as a special kind for the use of aviators called "Escadrille." Full details as to trade prices will be sent to

any of our readers who write to R. E. Bradford, Gloversville, N. Y., and mention the AMERICAN GARAGE & AUTO DEALER.

BRAD SPORT GLOVES BRING WINTER PROFITS

"Brad" sport gloves will find a ready sale during the coming months when so many motorists will be using their cars and must keep their hands warm. This line of gloves includes many varieties suitable for wear by both men and women owners of cars.

The Bradford styles are not limited to motoring gloves alone. There are other



Marvel Machinery Firm Helps Its Customers Increase Profit

The Marvel Machinery Company of Minneapolis, Minn., in presenting its new model machine—No. 5—to the trade, assume an unusual position with customers—the sales plan they are following—while in no way new or startling, has been worked out on the old time basis that "one enthusiastic customer is worth a basketful of luke-warm ones."

The Marvel No. 5, shown in the illustration, is intended to re-bore cylinders of gas engines, handling with equal ease and satisfaction, everything from a motorcycle to a tractor, but it can be used for other work—such as reboring tractor hubs, gears, pulleys, etc.

The machine is extremely simple and is automatic in operation. It has a friction disc feed ranging from twenty-six to one hundred and twenty threads to the inch—it is accurate to plus or minus five ten-thousandths of an inch at the extreme extension of the boring bar—it is speedy, being from five to twenty times faster than a grinder.

There is an automatic feed release on the Marvel No. 5 which stops the cut at any desired depth of cylinder, permitting the operator to attend to other work, while re-boring. There are more than five hundred Marvel machines now in use.

The company employs a campaign of direct advertising in the interest of its customers—sending out the matter to a list of names furnished, and in this way show

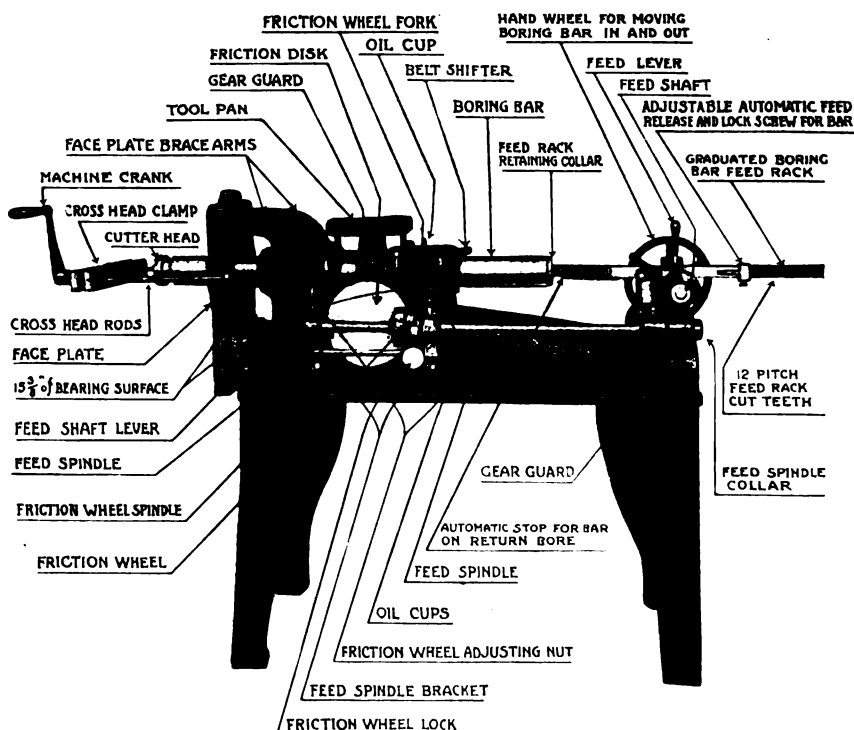
present owners of automobiles and tractors how they may get maximum life out of machines now in use.

In addition to furnishing the improved Marvel No. 5, the Marvel people have established an extensive department to promptly care for the piston requirements

of their customers. The Marco piston service with hundreds of patterns, is being added to constantly.

As with the Marvel cylinder re-boring machine No. 5, so with Marco oversize pistons—nothing but the very best of material and workmanship are employed.

All inquiries for further particulars should be sent to the Marvel Machinery Co., 1307 South Third street, Minneapolis, Minn., mentioning the AMERICAN GARAGE AND AUTO DEALER.



Marvel Cylinder Re-boring Machine No. 5.

How to Make the Shop Pay

Cars Repaired Quickly by Having Separate Crews Work on Different Parts—Owner Has Test Drive Before Approving Job

BY E. B. HINRICHSEN.

While the radiator work was being done, the motor men would get busy. The items covered on the work order would be done as far as was possible on the floor and a thorough inspection made. If the head motor man reported to the foreman that any work was required other than that ordered originally, the foreman would call up the owner and advise him. He would also tell him the cost of this additional work and get his O. K. before going ahead.

As soon as the motor work was finished or at the same time, if it was possible, the other items would be taken care of. The wheel and axle men would attend to the steering gear, lining up of wheels and adjusting brakes. The transmission men would get after the universal joints, transmission and differential. With everything working smoothly and every man knowing his work and just what to do, it was remarkable how quickly a job could be finished and what good work could be done.

By the usual system in practice in most shops, one or two men go over the entire car. This makes a long and slow job of it and there is usually something slighted. There are so many different types of mechanical combinations entering into the construction of the modern motor car, that specialists are really required for each combination in order to produce good results. The proper tools for each kind of work are also an item. One mechanic attempting to do all classes of work would need a truck to carry around the necessary tools.

Exposed Parts Covered.

There was one thing that Bill insisted upon. Before any work was started all exposed parts of the car must be covered. This included fenders, running boards and cushions. It was considered a crime to get grease or dirt on any of the finished parts.

After the job was finished in the shop, the foreman would inspect it. If everything had been done he would O. K. the cardboard work order and send the car down to the final tester. The tester would take the car out and put it through a severe test. This tester would also adjust the carburetor if this was required. He would put the car to all possible tests that might be met with in road work in the hands of the average user. It was his place to see that everything worked perfectly and that all work ordered had been done. He had a copy of the preliminary inspector's report and could check the various items. When he had finished his test he made out a similar report and this report had to show perfect all the way through.

If the shop had neglected to do something or if something had been done wrong, the tester would return the car to the shop with his comments and as we said before these comments were usually lurid. If the job was finished to his satisfaction, he would O. K. the cardboard work order, detach it and turn it in to the billing clerk with his inspection report. This told the billing clerk that the job was finished. Immediately upon receipt of this, the clerk would figure the job.

The jobs were figured both on a cost and selling basis. The selling sheet contained an itemized list of all parts and supplies used and all labor. The number of each requisition was put down and the number of each mechanic who worked on the job. There was also a space provided for any outside work or purchases. The selling price was entered opposite each item. The cost sheet, which was of different colored paper, was a duplicate of the selling sheet except that the prices were entered at cost.

Envelop Told Profit.

On the outside of the job envelop a space was provided for a summary of both cost and selling price separating the totals under the headings of parts, labor and outside work. Thus it was possible to tell at a glance at the outside of the envelop just what profit had been made on the job and if anything seemed wrong it was an easy matter to check up on the whole thing in detail by going over the various requisitions and work tickets in the envelop.

As soon as the clerk had finished the job, the regular bill or invoice was made up. This was for the customer. The job envelop itself was for the office files only unless a question was raised as to the work done or parts furnished, in which case it could be referred to in straightening the matter out.

As soon as the bill was made out, the billing clerk would call the customer on the telephone and notify him that his car was ready. The customer was also casually told during the conversation what the amount of the bill was whether he asked for it or not. The theory was that if he knew the amount, he would be more likely to come prepared to pay for it. This was necessary with the shop on a cash basis, especially if the owner did not carry a coupon book.

When the owner arrived, one of the testers would go over the car with him and take him out to see that he was satisfied. On this trip the owner would do the driving. It was often found that an adjustment that suited the final tester was not

satisfactory to the owner. This was from the fact that very few people drive alike.

Owner Signed for Car.

When the car was pronounced satisfactory by the owner, he paid the bill to the cashier who issued him a house pass. Upon presentation of this pass to the door man, he could take the car. The owner signed the pass which gave the house a receipt for the car. This pass then went to the billing clerk who put it in the job envelop which was then complete. The job data was then sent to Bill's office to be looked over by him and then filed numerically. Before it was filed, however, it went to the bookkeeper who made his entries from it and initialed the envelop.

The great advantage of this system is that all records on a piece of work are kept together and filed in one envelop. The record of each item done is clear and also the record of parts and supplies. If at any time a dispute should arise with the owner as to the work done at a certain time this envelop would tell the whole story. In one or two cases, before they got on a cash basis they had law suits over bills. These job envelops, complete as they were and with the signed house pass in them, were all the evidenced required.

They were also of the greatest help to Bill in watching his expenses. The summaries on the outside of the envelop told him at a glance what the profit was and at the end of a day he could tell exactly what the shop had made on completed work. Of course this would not cover work in progress but if there was any falling off he would catch it in a day or so from the jobs only even if he did not go near the shop. He always kept a pretty close eye on the shop though.

When a call came to make a repair on the road in case of a breakdown, the whole thing was handled in much the same way. These jobs were usually small and if they were likely to take long, the road man was instructed to get the car in to the shop if possible. If the work could be completed on the road, the road man acted as both testers, shop foreman and billing clerk as far as collecting for the job was concerned. The job was put through in the regular way after he came in and made his report.

Simply to sell a customer is one thing; to sell him so that he is heartily glad he bought and has confidence in you and your service, is a far bigger thing.

In the Truck and Trailer Field

Another Miami Trailer Type, New Model for Fire Fighting

So many demands have been made upon the Miami Trailer Co. for the construction of new models that W. F. Jolley, secretary and treasurer of the Troy concern, will soon be able to borrow a well advertised slogan and say his company is in the "57

varieties" class so far as the number of types goes.

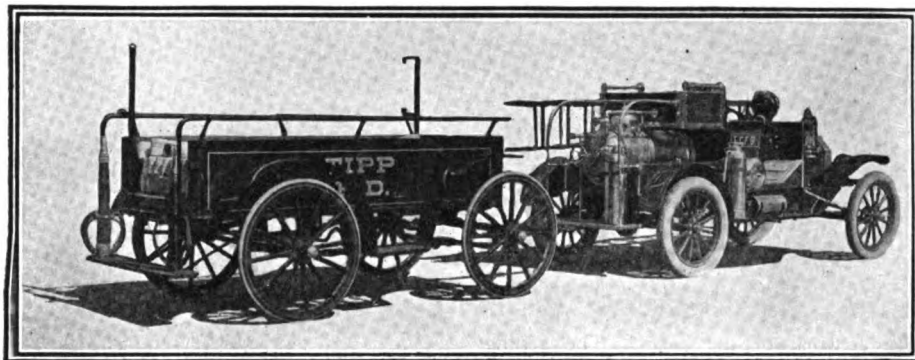
Another model trailer that will speedily prove popular is a type herewith illustrated for use by small-town fire departments. Quite a number of these Miami

"fire" trailers have already been sold, and wherever used the highest praise is extended for the service they render.

This new trailer, like the other Miami models, is sturdily and substantially built, so that it is adapted for the severest kind of use, and for all kinds of weather.

This is the day of the trailer—dealers that have previously looked upon a trailer with skepticism are now eagerly desirous of talking business. The trailer in the past year has been the salvation of many dealers who, had it not been for their trailer sales, might have been compelled to close up shop.

The Miami Trailer Co. has prepared a lot of interesting information showing how haulage costs can be reduced by trailers, also showing the advantages of Miami trailers, both as a sales auxiliary in making profits for the dealer, and in saving money for the trailer user, and will be glad to forward complete descriptive literature upon request, to any inquiring dealers that mention the AMERICAN GARAGE & AUTO DEALER.



Miami Trailer for Fire Departments.

One Truck Replaces 30 Mules Hauling Wheat



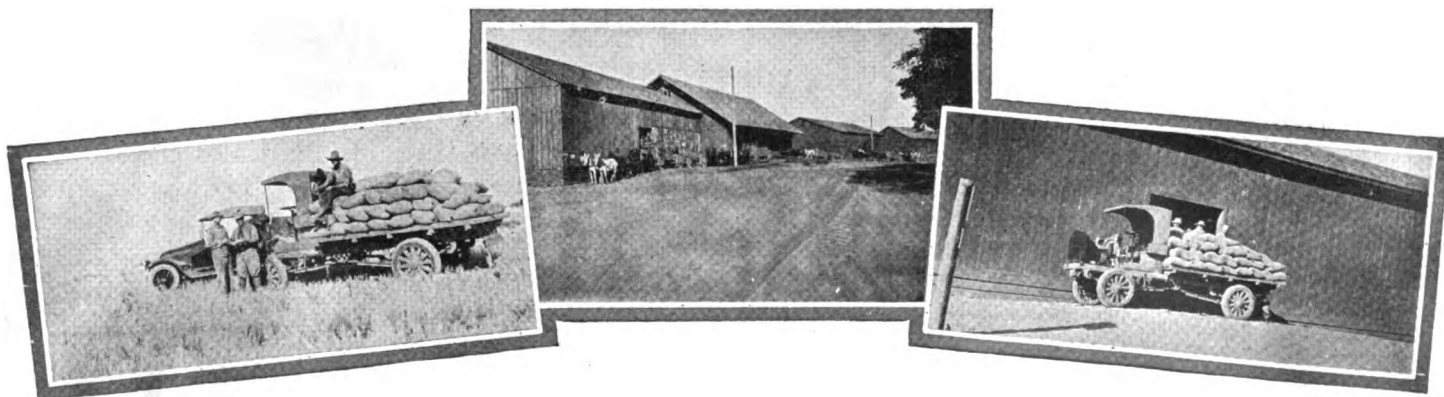
After Lee Joynes, the Walla Walla Duplex truck dealer, had shown him the superiority of motor truck transportation over that furnished by mule teams, Henry Echelpohl of Eureka, Washington, bought a Duplex truck. The Duplex dealer had 65 sacks of wheat loaded on a Duplex truck which hauled the load 3½ miles, through stubble and over bad roads, to the

warehouse in record time.

The photographs show the old method of hauling, six mules pulling 40 sacks; the loading of the wheat from the stack in the field, the hauling of 65 sacks through the stubble, the number of mule teams replaced by the truck, and the load at its destination, one-half hour after being loaded.

Mr. Echelpohl's farm this year yielded

approximately 20,000 bushels of wheat or a trifle less than 9,000 sacks. His Duplex truck has replaced 30 mules and horses, and saved the work of 3 men. When hauling his wheat by team the expense to him was 17 cents a sack, but the Duplex is now delivering at the warehouse for 3 cents a sack. This means a saving of more than \$1,200.00 in 21 days.



EDITORIAL REMARKS

Agitate Now for Road Improvements Next Summer

With the number of motor trucks in use by the Post Office department rapidly increasing in all parts of the country advocates of improved highways are certain to have powerful help in Washington in their efforts to spread the gospel of good roads. While this country was actively at war and the demands upon the carrying capacity of the railroads were so great that thousands of tons of munitions had to be transported by motor trucks over the highways, the need for better highways was forcibly brought to the attention of many government officials who might previously have thought that the agitation for good roads was merely a selfish one on the part of the users of passenger automobiles.

The marvelous growth and extension of rural motor express lines has been another means of calling the attention of city business men to the fact that the conditions of highways connecting their cities with other places is a big factor in the amount of business their concerns can do. Where many good roads radiate from a city the merchants and manufacturers of that city have a tremendous advantage in selling their manufactured products or other merchandise to customers located along these lines of improved highways.

Use of a rural motor express line has often enabled a shipper to send his goods 30 or 40 miles by motor truck in half a day, where 3 or 4 days had been required to move goods the same distance by railroad. When the expense of moving goods from the original shipper's establishment to the freight house and from the freight car to the consignee's place of business was added to the freight rates the expense was generally more by railroad than by rural motor express, leaving out of the question altogether the great advantage of the rapid delivery from start to finish by one motor truck.

Over most of the country it will not be possible to do much or any road improvement work until Spring, but now is the time to start working for better roads. Motor tradesmen everywhere can help their own localities and benefit their own business by doing everything possible to induce their state legislators, as well as congressmen and U. S. senators to take action for good roads.

While the national government, due to the ever growing need of the post office department for improved highways over which to run post office trucks, will likely continue to help the different states defray the costs of improved through roads, there still remains much work to be done by the states and cities and counties in them. In the cities and towns where there are associations of automotive tradesmen the work should be taken up both by the organizations and their individual members.

The time to begin is NOW.

Stability of the Retail Motor Vehicle Trade

Even though the majority of retailers of motor cars and motor trucks were forced to get along with many less vehicles than they could have sold during the past two years the majority have come through with flying colors in a business sense. This is shown by a recent announcement of one of the pioneer makers. This particular concern lost less than 2 per cent of its active distributors since war was declared so far as its number of dealers goes, but in a financial sense the showing is still a better one. This firm's dealers have invested more than \$20,000,000 in plants and equipment for sales and service, and the two dealers who dropped out had invested but \$60,000.00 or a fraction of one per cent of the total. While this concern may have been more lucky than some of the younger manufacturers in the industry perhaps a majority of the makers have had much the same experiences. In many instances dealers in cars or trucks have extended their lines, and have been selling accessories, truck units, trailers, tractors and farm electric plants during the months they were unable to get as many cars and trucks as they wished, and in that way making the profits needed to keep their organizations on their feet.

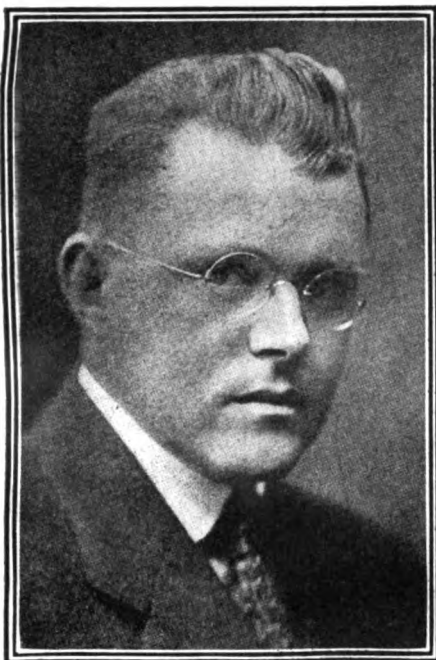
Trailer Profits NOW

Especially during the coming few months while the manufacturers of light motor trucks are changing over from a war basis to peace production it will be possible for energetic automotive merchants to sell a great many trailers. Trailers of both the two wheel and four wheel variety could be used and would be bought by thousands of concerns if their virtues were properly presented by tradesmen who take up the sale of these vehicles. In the small cities and towns several thousand two wheel trailers could be sold to storekeepers and others for use as light delivery wagons. They can be attached to passenger cars as well as to trucks. Many of them are already delivering groceries, meats, hardware, and other merchandise for business men who thus use their passenger cars as transportation units six days out of seven, and have their car unchanged to take their families driving on the seventh day by detaching the bolts with which the trailers have been fastened to their cars. In the case of manufacturers or others that have heavy loads to carry they can very often more than double their present hauling capacity, at very slight added expense, by buying one of the larger four wheeled trailers.

William Strong Wright

The Flexlume Sign Co. has suffered an irreparable loss through the death of William Strong Wright, which occurred at Buffalo, recently, from pneumonia following Spanish influenza.

Mr. Wright, although only 31 years of age at the time of his death, had been treasurer of the Flexlume Sign Co. almost from the time of its inception. He joined forces with the organizers on being graduated from the University of Illinois in 1910, and the part he has played all through the history of the company has been a most important one. It was through his efforts that part of the first capital for the American company was raised, and his careful financing of the business since that time has had a great deal to do with its success.



The Late William Strong Wright.

Born on November 29th, 1886, Mr. Wright received his early education at South Hadley, Mass, where his father, Alvin L. Wright, had extensive interests. He attended the University of Vermont for a couple of terms and later graduated from the University of Illinois.

Qualities For Salesmanship

A green salesman can sell goods sometimes—a "blue" salesman, never, George W. Hopkins, advertising manager of the Columbia Graphophone Co., New York, told members of the Junior Advertising Conference at the San Francisco Convention. Optimism, he said, was the foundation for enthusiasm in selling goods, says *Associated Advertising*.

The average merchant, he said, buys discounts rather than looking upon the goods as an opportunity to resell at a profit, and the wise salesman is the man

who shows the dealer he is offering to sell the merchant profits, rather than mere merchandise.

A good salesman who leaves a store without having sold a bill of goods, he said, will stop and review what happened. The merchant said this, etc. Such a review will usually show a salesman what he might have said that would have closed the order and he will try this argument first in the next store he enters.

"No" is the first word of the buyer, Mr. Hopkins said. The salesman needs to get a pencil into the hands of the buyer and make him a part of the demonstration—make him a part of the selling operation. Mr. Hopkins suggested that the salesmen should avoid technicalities and that, first of all, the successful salesman must "sell himself" to the prospect.

Vincent, Vindicated, Back at Packard Duties Again

Commended by the President of the United States for his services to America in time of national need, and vindicated on all his acts in the speedy production of a military aviation engine for the United States forces, Lt.-Col. Jesse G. Vincent has received an honorable discharge from the army and returned to take charge of Packard engineering.

"The President believes that the two gentlemen concerned, Lt.-Col. Geo. W. Mixter and Lt.-Col. J. G. Vincent," says an executive announcement from the White House December 3, "were entirely innocent of any improper or selfish intentions, that their guilt was only technical, and that their services to the Government, which have been of the highest value and of the most disinterested sort, deserve a cordial recognition."

The chief magistrate thus disposes of any criticism that was embodied in the Hughes report of Oct. 31.

Mr. Vincent went to Washington May 27, 1917, to submit to the aircraft production board the drawings and parts of an aviation engine that he and his staff had just completed as the crowning development of an effort to which the Packard company had devoted more than two years and \$400,000.

It was with the assistance of E. J. Hall, of San Francisco, Mr. Vincent, using the Packard "905" as a basis, designed the Liberty motor. In the manufacturing development of the Liberty such changes as were made were back in the direction of Mr. Vincent's original design. Engineering authorities declare that the Liberty motor is the finest engine ever built, and, in some respects, was the greatest single contribution to the war.

June 11, 1917, President Alvan Macauley of the Packard company placed Mr. Vincent's services exclusively at the command of the Government. August 15 he re-

signed the Packard vice-presidency of engineering to become a major in the signal corps. Last March he was promoted to lieutenant-colonel in the aircraft service.

Rims in Window Display of Bearings Service Firm

Displays in the windows of its branches are being used by the Bearings Service Company in advertising the service it is prepared to give on rims in addition to its original work of looking after users of Hyatt, Timken and New Departure bearings.



The company is prepared to give to users of Baker, Detroit and Jaxon rims service at its 22 branches and more than 750 distributors. In the November issue of *Bearing On Us*, the Bearing Service Company house organ, there is an article on "Merchandising Rims and Parts." This tells the need for active sales work on rims because they are bought mostly by individual motorists who will appreciate the kind of attention and advice that is not required for buyers of bearings. The picture with this article was used to illustrate "Merchandising Rims and Parts."

\$5 for an Attractive Window Display

If you will send us a picture of your window display, together with a description and a report of the results, we will gladly award \$5 to you for photographs accepted for publication.



Hardware Men Succeed with Tires

Tire dealers and distributors located in districts where State or county fairs are held can often arrange exhibits at these affairs and thus help along their business. One concern that realized this fact is the W. A. L. Thompson Hardware Co., at Topeka, Kansas, which had a display of Amazon tires at the Kansas State Fair. The illustration of the Thompson space appeared in a recent number of THE AMAZONIAN and was accompanied by the statement that the firm "has eleven men all boosting for Amazon and is rapidly Amazoning the entire state." Concerning its success as an Amazon distributor the Thompson company makes the following statement:

We are glad to give our experiences in the selecting of a tire and the reason that we decided upon the Amazon

line. We will say that our experiences, like a great many other hardware jobbers, has been one long continual line of grief from handling not only jobbers' lines of tires, but also in one or two highly advertised lines. In taking up the continuation of the tire business, it was our idea to get a tire that we were thoroughly satisfied was good or discontinue the tire business entirely.

We went on a still hunt for this tire, and the Amazon tire was called to our attention through a small agency which has been placed in our city. We kept track of these tires which were running on different commercial trucks here to see their performance until we were satisfied that it was the tire we wanted.

Our next investigation was as to who were making this tire, and what the disposition was of the men who

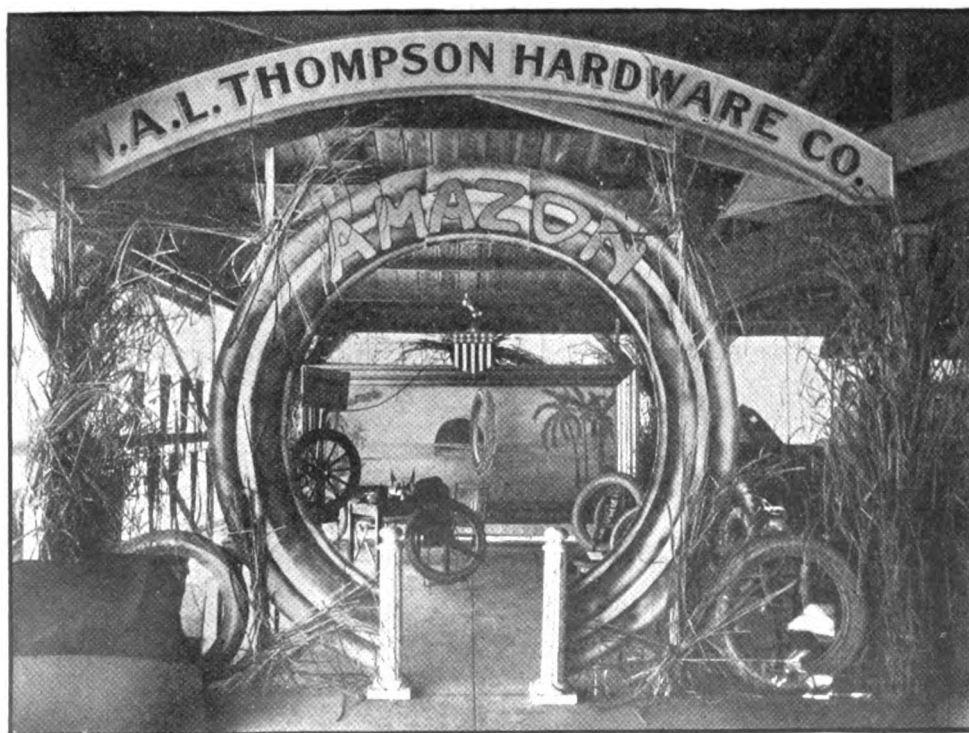
were building it. We believe here that a tire is as good as the people making it, and it was our work to find out whether these men were backing up their product or not.

We thoroughly investigated this and after we had made up our minds that they were the right people to back up a product which we wished to handle, we sent one of our employees, who is an old and thoroughly posted tire man, on a trip to Akron to thoroughly substantiate these facts before we invested very heavily in this line. Upon this investigation we were more than pleased with the reports that we received and immediately stocked this product.

We went out to the trade and told them exactly what we had found, exactly what our investigations had been, and gave them the same assurances that we ourselves had received, that we not only had the right piece of goods, but we had the right man back of it. The trade took this proposition in the same spirit that we did, and our sale has been a wonderful success.

We have opened up more than two hundred active agencies for this tire in the State of Kansas and Northern Oklahoma in the past four months. We have more than doubled our expectations on the resale of this tire. We have had the heaviest volume of tire business this firm has ever known in the history of the automobile supply department. We are satisfied that should we be able to get the tires for resale during the next year that we will more than double our 1918 record.

Up to the present time our adjustments on Amazon casings



Thompson Company's Amazon Tire Exhibit at Kansas State Fair.

have run less than one-quarter of one per cent. This amount on a sale of approximately 4,000 casings we consider extremely small, and is much less than we have ever experienced before in any line that we have handled.

FORECASTS BIG TIRE BUSINESS

"When peace terms have finally been agreed upon, we anticipate an increased business over an indefinite length of time and preparations have been made accordingly," reads a statement just issued by Jacob Pfeiffer, president of the Miller Rubber Co., of Akron, Ohio. The widely known geared-to-the-road tires and drug sundries comprise the principal products of this concern.

"The Miller Rubber Co. is today in the best condition of its whole history," continues the statement. "For the first time in years our building operations are complete, at present, and we find ourselves in position to accomplish an annual business turn-over of between \$30,000,000 and \$40,000,000.

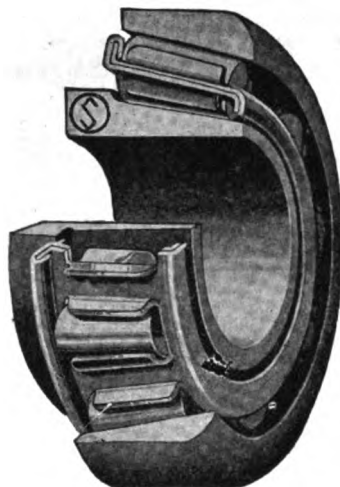
"Practically all of the war orders that have taken up so much of our time have been cancelled, but, because all of our old going-departments remained absolutely intact, we were able to switch off from the war work to regular production without much trouble. With splendid resources in the way of buildings and equipment at our command we do not require much readjustment from a war basis to a peace basis.

"While it is true that we cannot determine at this time just how long certain government restrictions may remain in effect concerning the production of rubber goods, we believe we will be permitted to produce a sufficient output of tires to furnish work for all our former employees, who are now in military service, as soon as they return, as well as retain those now in our employ."

New Roller Bearing for Ford and Chevrolet Wheels

F. W. Stewart of 1402 Michigan avenue, Chicago, wishes to call the attention of the trade to the F. W. S. Roller Bearing, which has been especially designed for Ford and Chevrolet front wheels. The principal features of this bearing are:

Broad wings of cage provide broad and smooth surface against rollers, so rollers cannot get out of line. The cage is se-



cured by double walls of high carbon steel, outer edge reinforced by turned edge, giving three thicknesses at that point. Large diameter rollers and open cage prevent accumulation of dirt and avoid friction.

Large rollers minimize friction and wear, practically eliminating breakage. The wings provide pockets to retain the grease, but accumulated dirt cannot pack in around the rollers. The cones and ringers are made of especially prepared steel properly tempered and ground to absolute accuracy in size and contour.

Further particulars will be gladly sent to interested garagemen, repairmen, service stations and dealers, upon request, who mention the AMERICAN GARAGE & AUTO DEALER.

Penlings from the Pen of Dike

(Not copyrighted)

That letter S starts two words that if you will use them will make your business good 365 days in a year, they are Service and Smiles.

Mr. Garage Man: If you are just selling Cars, Trucks, Tires and Accessories you are just hitting on Four Cylinders. Sell Tractors and Farm Lighting Plants and Hit on all Six Cylinders of the Motor Business.

Clean overalls every day is a mechanic's best advertisement.

Keep the Bolts tightened on your Customer's Car and He will always keep his Purse Strings Loose.

Never Knock your Competitor's Car. Some day you may be selling that same make and Folks have Wonderfully good Memories.

Free Air and Free Water are two big items that Keep your Cash Register Ringing.

Neat, Attractive Show Cards and Price Tickets loom up in your Show Window just the same as a 2-Karat Diamond shirt stud looms up in a White Stiff Shirt.

People Read the Papers.

They read 'em every day.

So Advertise and let 'em know

What you have to Say.

If you handle Nationally Advertised Goods, Your Customer is 75 per cent sold when He sees you've Got 'em.

An Old Maid for a Husband

Did Advertise one day.

She's Married now, and Happy.

Can't tell her an Ad don't Pay.

New Faces pass your store every hour; keep your Show Windows Neat and Clean, and New Faces will Darken your Door.

Attend Church, Social Gatherings and Business Meetings and let Folks know that you are thinking of more things than Jist Motor Dope.

Having Things when Folks want 'em is the Secret to Bigger Business.

C. H. WOODEN (Dike).

Lamar, Colo.

Dearborn Purchase Assures Service for Smith Truck Users

Now that the strongly financed and well organized Dearborn Truck Company has taken over the parts and good will of the Smith Motor Truck Corporation and the Smith Form-a-Truck Company, present and future users of Smith units are assured of being able to obtain proper service. The Smith parts have been moved to the new Dearborn factory at 2515-2525 W. 35th street, Chicago, but the sales and advertising details will be handled from the Dearborn general offices at 2015 So. Michigan avenue, Chicago.

The Dearborn company started business in 1916 on a small scale, producing only a one ton truck unit to convert Ford cars into one ton trucks. A little later the concern brought out a two ton truck unit for Fords. The development of the Dearborn Universal one and two ton truck units was announced in July, 1917. By the use of these units any kind of a car can be converted into a one or two ton truck.

In April last the company bought a three-story brick factory building. This plant has more than 60,000 square feet of floor space, two individual power plants, sprinkler system throughout, a switch track and all necessary equipment for quantity production.

With the curtailment of passenger car production, due to the conversion of automobile factories to war work, the demand for complete trucks increased rapidly. To fill this need the Dearborn engineers designed two new models of worm drive trucks. The Smith complete chain drive truck of one ton capacity and the

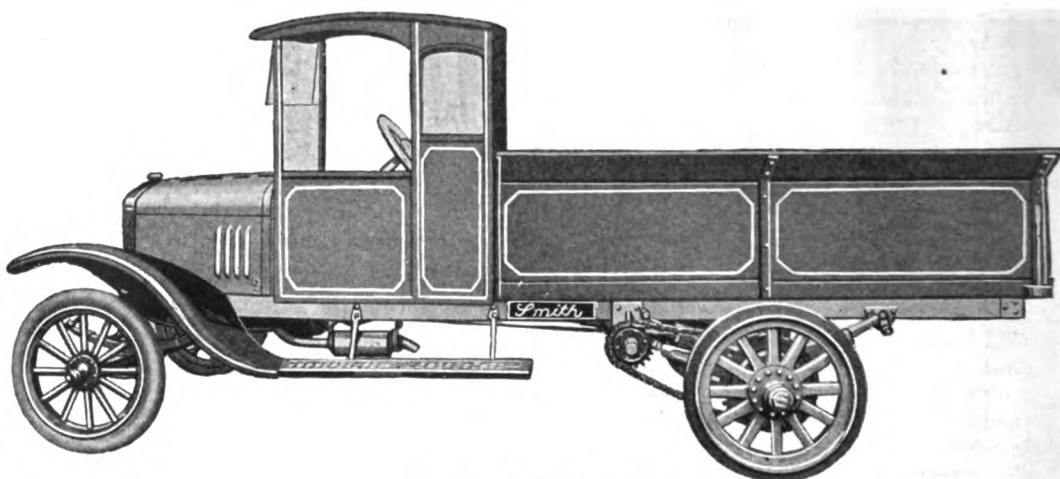
Dearborn chain drive truck of two ton capacity were designed to supply popular priced chain drive trucks for buyers whose business required efficient, rapid and economical transportation.

The Dearborn sales and advertising departments assist the dealers by supplying sales manuals, catalogs, hangers, mailing folders, leaflets, blotters and other sales and advertising matter to help interest prospective buyers. The company also has a very attractive advertising proposition, by which it shares part of the expense,

model B will be similar to model A, except in capacity and price, and will be ready for distribution about the first of the year.

The Dearborn Universal truck units are of two capacities, a one ton and a two ton. The Dearborn Smith Form-a-Truck units for Ford cars are also produced in two models, a one ton and a two ton.

No trouble to buy, cheap, convenient, a real investment — WAR SAVING STAMPS.



Dearborn-Smith Truck.

that has proved to be very successful in increasing the profits of Dearborn dealers.

The Dearborn worm drive trucks are model F of 1½ ton capacity, and model H, which will carry 2½ tons. The Dearborn complete chain drive models are the Smith one ton type, called model A, and the Dearborn two ton type, called model B. The model A is an especially easy vehicle to sell, retailing as it does at \$975.00. The

National Air Compressor Can Be Moved Around

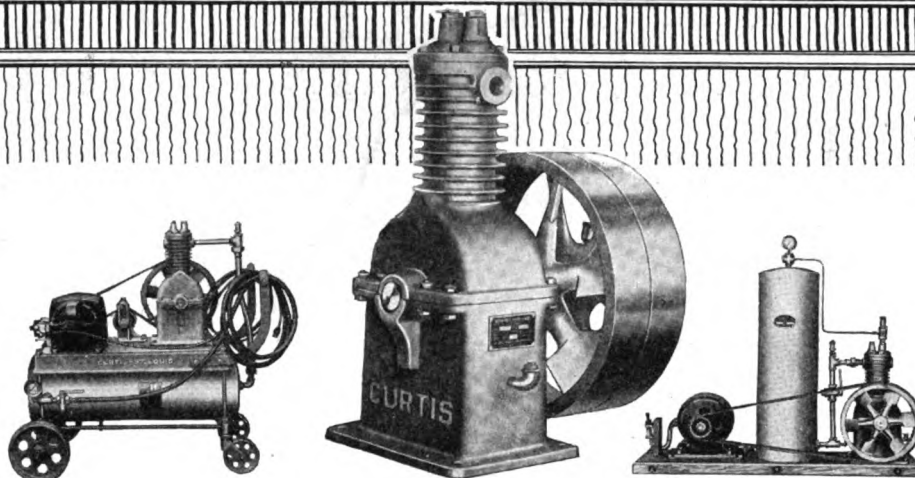
National portable air compressors are adapted for use where it is necessary to have a supply of compressed air delivered at different places and under constantly changing conditions. They have the advantage of being easily hauled from place to place and do not require the construction and maintenance of extensive piping.

The motor compressor and one or two steel air receivers with accessories are mounted on a specially built steel truck with steel wheels and axles, the latter being carried in housings extended from the frame. The frame is made of angle iron fastened to cast steel ends. A galvanized iron pan surmounts the outfit and carries the hose used to conduct the compressed air from the reservoir to the place of delivery.

National portable outfits can be drawn from place to place by means of the handles attached to the trucks. Readers wishing detailed information and trade prices can obtain them by writing to the National Brake & Electric Co., Milwaukee, Wis., and mentioning the AMERICAN GARAGE & AUTO DEALER.



Dearborn Truck Plant.



"The Plant Behind the Product"

SINCE 1854 (seven years before the Civil War) this organization has continued its steady growth and development—has weathered the storms of three great wars—and today our plant covers nearly twenty acres—employs over two thousand men, and has a national reputation for the superiority of its product.

Of our war record we are justly proud. From the first days of America's entry into this great struggle, the CURTIS COMPANY has been in the Service—one of America's Volunteer Industries that has contributed its utmost to the victory that has been achieved. And now—with a greater organization and largely increased facilities—the heritage of our war activities—we are able to serve you even better than before.

The CURTIS Model "B" Garage Air Compressor stands pre-eminent in its field—the perfected result of our sixty-four years of successful manufacturing experience and over twenty-five years of specialization on pneumatic machinery.

You can install a CURTIS Compressor with the utmost confidence in its design, construction and fitness to perform its duty—and with the assurance it will render unqualified service for years to come.

"Ask your jobber."

CURTIS PNEUMATIC MACHINERY CO.

1515 Kienlen Avenue

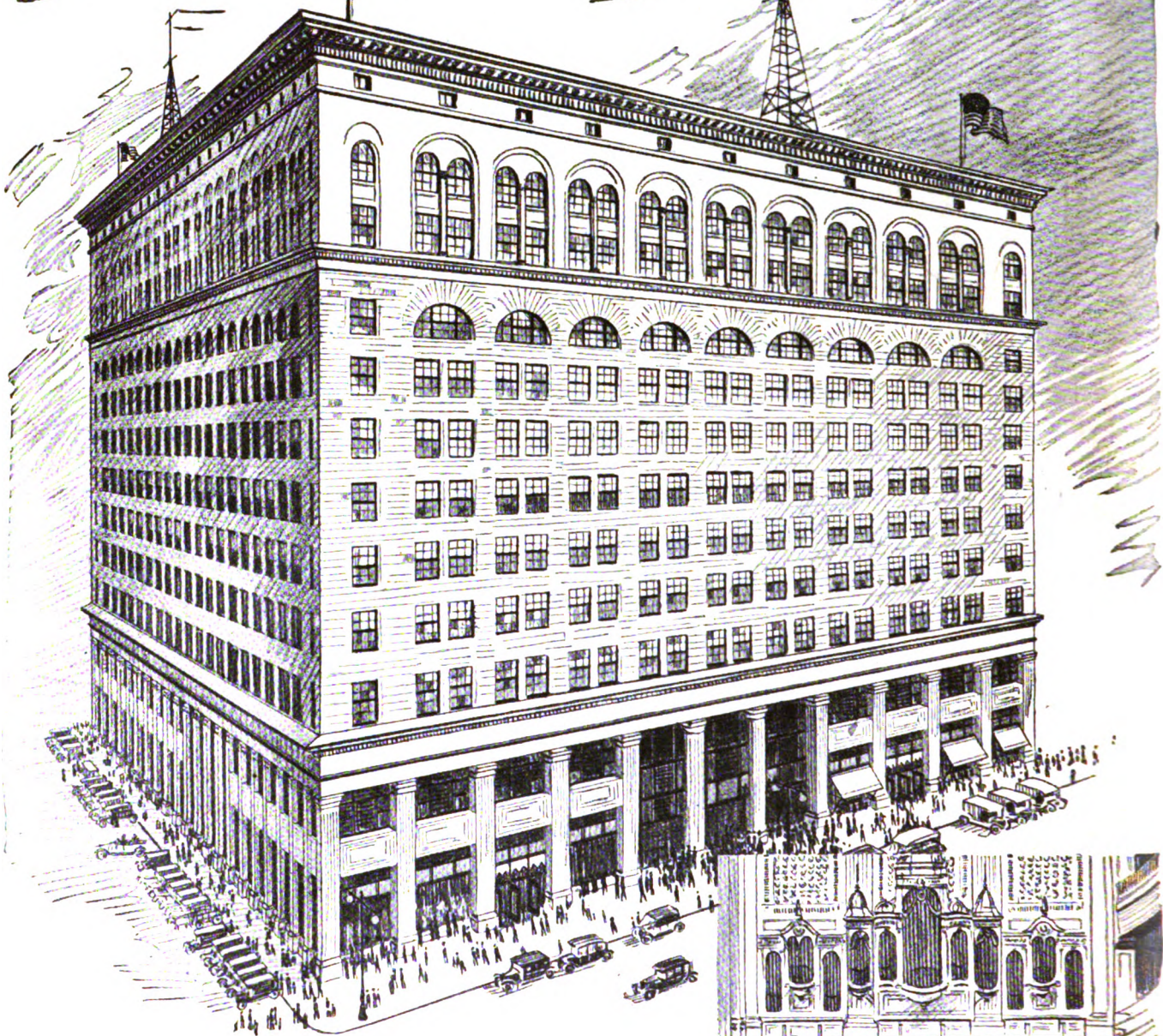
St. Louis, Mo.

Branch Office:

530-U Hudson Terminal, New York City



John Wanamaker buys 100



The John Wanamaker Store, Philadelphia. One of the largest, one of the busiest, one of the most perfectly conducted department stores in the world.



The Grand Court in the John Wanamaker Store, Philadelphia. Thousands of merchants visit this arcade every year to see how business is being handled.

more National Cash Registers to meet the present-day shortage of help.

Mr. Wanamaker says:

“A large number of people have been taken out of the big stores. The men have enlisted. The women have gone into Red Cross work and nursing.

“We are able to fill some of their places with improved cash registers. This frees many persons for war work.”

Mr. Wanamaker's statement that cash registers save labor, is based upon critical investigation and upon experience with N. C. R. Equipment extending over many years.

His recognition of the labor-saving qualities of modern National Cash Registers is plainly shown by a contract he has just placed for nearly \$100,000.00 worth of machines. This order calls for 100 of

our latest model clerk-wrap registers. It is the largest single order ever placed with us for one store.

The high character of Mr. Wanamaker's stores, the careful tests made by his executives, and the size of his orders, combine to make his personal endorsement extremely important to other merchants struggling with the present-day shortage of help.

The National Cash Register Company, Dayton, Ohio

Offices in all the principal cities of the world

Welding, Cutting and Brazing

Care of Welding Equipment

BY DAVID BAXTER.

It is surprising what little care is taken of the oxy-acetylene equipment in the average welding shop. The torch, regulators, generators, hose, and even the drums of gas seem to receive but scant attention. I have come to this conclusion after watching some trouble with a drum of oxygen in a certain shop. I talked with the operator who was in trouble and then visited several other shops where I talked with the different torch operators about their difficulties, doing the talking in an impersonal off-hand way so they would be frank with me.

They all had their troubles in varying degrees but few of them realized that most of the trouble could be prevented or avoided by giving proper attention to their equipment. I saw that most of the operators only lacked instruction in the art of caring for their equipment. They had lacked this from the very start; whoever had sold the plant to them had somehow or other neglected to furnish instruction, or else had not properly impressed it on their memory. All of which leads me to believe an article along this line will be appreciated just at a time when the welder is going to be called upon to do his utmost. For I believe the after-war business is bound to be greater than all the war business. This country is going AHEAD.

Oxygen.

First let us discuss the oxygen supply and equipment: Oxygen as it is now universally used for welding is received in cylinders or drums, or as it is more commonly called, tanks. These drums or tanks are so simple and innocent in appearance it is scarcely any wonder they receive but scant attention; there seems to be nothing to care for.

In reality a tank of oxygen is a delicate contrivance easily subjected to injury through carelessness or neglect. When "loaded" it is under a pressure of 1800 pounds to the square inch; this should suggest to us the fact of its liability to leakage and that this high pressure will soon exhaust the contents in event of even a small leak. So we should be careful not to permit any damage to the valves or connections. Also to be certain the valves are closed before leaving the tank as any escaping oxygen may help to cause a dangerous fire.

If you receive a leaky tank send it promptly to the factory, marked for repairs. Oxygen alone will not burn but it is a great promoter of fire; without the oxygen element in air nothing can burn.

Oxygen coming in contact with oil or grease of any kind, under certain pressure and velocity, forms an ideal condition for spontaneous combustion, which may result in a violent explosion dangerous to life and buildings. This means be careful not to apply any oil or grease to any of the valves or connections of the oxygen tank or regulators, especially the outlet of the tank valve.

If the threads get stripped or mashed so they don't work good repair them dry or send the tank back to the filler, but do not attempt to make them turn easily by applying oil; you are taking chances if you do. As an added precaution, do not store the extra drums beneath an oily line shaft or in other places where oil is likely to drip on them, or in a place where litter gathers.

Repairing Cylinders

I wish to take this opportunity to correct, or perhaps it is only elucidate, some statements made in the November issue of this magazine regarding the repair of scored automotive cylinders. I fear after re-reading that I was not explicit enough.

On page 32, third column, 35th line I said the tinning solution was composed of vitrol, salamoniac, and muriatic acid, equal parts. This should be: the first two ingredients, equal parts, dissolved in water. The muriatic acid is kept separate. The first, or vitrol solution, is applied first and allowed to dry, then the muriatic acid is applied in the same manner over the first solution and allowed to dry before melting the solder.

Now if there are any other parts of that instruction that are not explicit enough, please feel free to write to the Welding Department for information. Will also be glad to answer questions on other welding problems—send them in.

The oxygen tank usually has a narrow base rounding on the edge which makes it easily tipped over. Therefore the tanks should always be chained or strapped to the truck or wall; to allow them to fall will result in damaged valves, gauges, or regulators.

There is another advantage to be gained by keeping the oxygen tanks upright when in use, or in storage for future use. Any water that may be present in the tank will naturally seek the bottom. This helps to prevent the water from being drawn out through the valves and regulator, upon which it has an adverse effect as it also has upon the welding flame. The longer a tank stands on end before using the less liable will be the danger of drawing moisture through the regulator. Where there is

a perceptible amount of water it may be expelled by inverting the tank for a while, opening and closing the valve quickly. This will blow the water out with but little waste of oxygen.

It has been noticed that oxygen works better when the tank is warm and that it gives poor service when cold with frost or snow. This means to give the tanks a warm, dry storage space especially during freezing weather. It should not be taken to mean that the tanks are best hot. During hot summer weather don't allow the tanks to remain outdoors in the blazing sun. Last but not least return the empties promptly. One of the greatest costs to the manufacturer is the tanks. The fewer he has to have, the less will the oxygen cost you.

Acetylene.

Acetylene gas is supplied to the repair shop in two ways: by a portable generating plant, and in tanks similar to those used for oxygen. It is not the purpose of this article to discuss the relative merits of either method with the idea of recommending one or the other. We will take one at a time and endeavor to make clear the principles involved.

The Tank Method.

Tank acetylene is supplied to welders in cylinders varying in capacity from 100 to 500 cubic feet. Their shape is somewhat different according to the ideas of the different manufacturers. However, like oxygen drums, they are easily tipped over and should be fastened to the truck or wall for the same reasons. Like oxygen tanks they seem to give better service when erect; there is less danger of drawing the acetone or impurities out through the torch. The impurities and the acetone are for the most part heavier than the acetylene gas, therefore they tend to settle toward the bottom of the tank.

A responsible manufacturer will exercise great care to fill the cylinders with pure gas, but it is impossible to prevent all impurities from entering the mixture. So the welder should do all he can toward preventing the impurities from reaching the flame.

For the benefit of the novice a few words of explanation concerning the filling of acetylene drums may not be out of place. Acetylene is a dangerous element when in a free state under pressure. Therefore it cannot be pumped into tanks without first filling them with some sort of material which will prevent vacant spaces. To overcome this difficulty the tank is first filled with a porous substance then acetone is poured into it. This acetone is a very volatile liquid which absorbs the acetylene gas as fast as the cylinder is filled. When properly made and filled there is



RESULTS COUNT—Getting a legitimate profit for your effort—increasing your balance in the bank—that's the answer to a real day's work.

The extracts from letters shown above are but a sample of those we receive daily—they indicate the results being secured by owners of Marvel Machines—they prove that a Marvel Cylinder Re-boring Machine No. 5 is the biggest business builder and profit maker that ever went into a garage or machine shop.

Install a Marvel in your shop now—let your customer know you have it—tell them what you can do for them—and you will not part with it for many times its cost.

We are facing the greatest era of good times, good business and real profits, that our country has ever known—prepare to get your share.

Passenger cars—Trucks—Tractors—Stationary Engines and Motorcycles now in use must be continued in service. Equip your shop to add to their efficiency.



The Marvel Cylinder Re-boring Machine No. 5 and our Marco Piston Service Department enable you to Re-bore Engine Cylinders and fit them with Oversize Pistons.



The Marvel will prove a real Marvel in your shop—Automatic—Accurate—Efficient—Substantial and Easily Operated.

The Marvel is power driven—has variable feed speeds and automatic feed release—permitting the operator to attend to other work while re-boring—doubling his day's output without strains—grunts or backaches.

Write at once for our proposition—let us tell you about our co-operative advertising to help you get the business.

With a Marvel in your shop you can make 1919 a banner year—we are ready to do our share.



little danger in handling or utilizing the gas furnished in tanks.

The very devices used to prevent one hazard pave the way to another; this acetone will come out with the acetylene gas while the torch is being used if the torch is too large or if several torches draw upon one tank. In any event the acetylene should not be used at a speed of over one-seventh the capacity of the tank per hour.

In other words: a 200-foot tank should last at least 14 or 15 hours with the average torch burning continuously. If you must use a heavy flow of gas connect several tanks together with special connections. The use of a large manifold is not to be recommended because it is wasteful and dangerous.

The acetone is very harmful to melting metal, especially steel, therefore let us do everything we may to keep it out of the welding flame. Get your manufacturer to furnish a table telling the capacity of different torches so as not to employ a too-heavy torch for the cylinder capacity.

Full tanks should be kept away from excessive heat; the pressure doubles as the heat doubles. We deduce from this that it is not well to have the acetylene tank near a preheating job, particularly a heavy job. Nor is it well to leave the tanks outdoors in a blazing sun.

At the same time it is not good practice to allow them to remain outdoors long enough to freeze during winter. And it is advisable to have the shop warm over night during very cold weather. It is sometimes necessary to warm the acetylene tanks before they work properly; this should be done gradually, not near a fire.

As with oxygen tanks, a leaky or damaged acetylene tank should be returned to the manufacturer for repairs; for the average welder to attempt to repair it is risky business. To attempt to make repairs with the welding flame is criminal. Leaks are readily detected by the sickening smell; get the leaky tank outdoors or away from proximity to any fire as soon as possible.

After the acetylene has been exhausted the tank valve should be closed or else the acetone will evaporate, which renders this particular tank defective to the extent of the evaporation of the gas. Now, while manufacturers try to replace all lost acetone, their employees are but human so you may get back the very tank from which you allowed the acetone to escape.

Acetylene Generators.

While most repair shops use tank acetylene at one time or another, and usually have on hand a tank or so all the time, they nearly all have a generating plant because it is the cheapest for the purpose. This part of the welder's equipment probably requires more care and constant attention than any other one thing. Still the requirements are few.

First, understand its mechanisms; to have the maker furnish a sectional draw-

ing is a great help in grasping the principle upon which it works. There are two ways generally employed in generating acetylene gas: water to carbide—carbide to water. It is with the latter we will deal as it is the system used in many generators.

It is obviously needless to give a description of the generating plant except to call attention to the simple requirements for a generator that will produce reasonably pure gas with a minimum of hazard. The main tank should have a capacity of at least one gallon of water for each pound of carbide; if the hopper holds fifty pounds the tank should contain fifty gallons of water. The pressure created should not be allowed to go over fifteen pounds to the square inch; means to prevent this should not be omitted from any machine.

There should be a safety device for preventing the return of the flame to the generator tank—some means to keep the flame from flashing back to the generator. A filtering device to prevent impurities from reaching the welding flame is necessary on any generator. If the generator embodies the foregoing features it is apt to be reasonably safe, providing it is properly constructed.

One of the first things to do in caring for the generator is to give it a good location. The fire laws of many states require the generator to be housed in a separate room. In this case it is wrong to build a shed with barely enough room to hold the tanks. The generator room should be large enough to permit a free circulation of air and large enough that the generator need not be placed close to the wall. A free access to all sides of the tanks at all times is to be desired.

Like all devices using chemicals the generator tanks are subjected to corrosive action of the carbide and water, especially around the pipe connections. If the plant is not inspected at reasonable periods it is liable to corrode enough to permit a sudden increase of pressure to burst through. Under favorable conditions this might cause a bad explosion or fire. Therefore test the generator for weak spots about once a month; clean the tanks and connections and give them a coat of paint.

A great many hand-feed generators are yet in use over the country. This kind requires a little more care than the automatic kind. It also requires the welder to be a little careful in manipulating the apparatus. For instance: if he dumps a charge of carbide and the gauges do not respond it is natural for him to "give her another shot;" he thinks perhaps that no carbide was fed into the water. He is probably wrong in the supposition because the feeding device is usually so simple that it can not fail to work. The trouble then must lie in the gauges or pipes.

Cases like this have been known to happen where the gauge failed to register un-

til the third charge had been dumped. But when the gauge responded it did so with a vengeance and everybody left that vicinity pretty badly frightened; the gauge had only "stuck." Fortunately the water had just been changed so there was plenty of fresh water to keep down the temperature. Fortunately also the plant was strongly constructed and in good repair.

This teaches carefulness, also to guard against the excessive use of acetylene gas, even with an automatic feed. When it is overheated it is no longer acetylene gas; it is then a mixture of other gases, the nature of which would require too much space to explain here. The results are enough: it is wholly unfit for welding steel and gives poor results on other metals. A safe rule to follow is to not use more than 50 cubic feet per hour of gas with a 50 pound generator of the carbide to water type.

Another place where many operators are lax is when recharging the generator. The tank should be washed out thoroughly at stated intervals. All carbide residue should be flushed out and the tank refilled with fresh water. The makers will gladly furnish instructions for this in detail. In absence of such instructions a safe procedure would be to clean the tank after every 50 pounds of carbide had been converted, this for a 50 gallon tank.

During winter the tank is liable to freeze if some provision is not made for heating the generator room. This is quite a problem for the small shop since it is hazardous to have a fire near the generator due to the danger of leakage which may be unknown to the operator. Especially is this true if the room is very small. In the day-time the difficulty of keeping the generator from freezing is not so great as there is usually some one around to prevent it. But at night (the very time when the freezing is liable to occur) the operator must be careful. If he has no way to heat the apartment he will do well to drain the tanks every night and on Sundays.

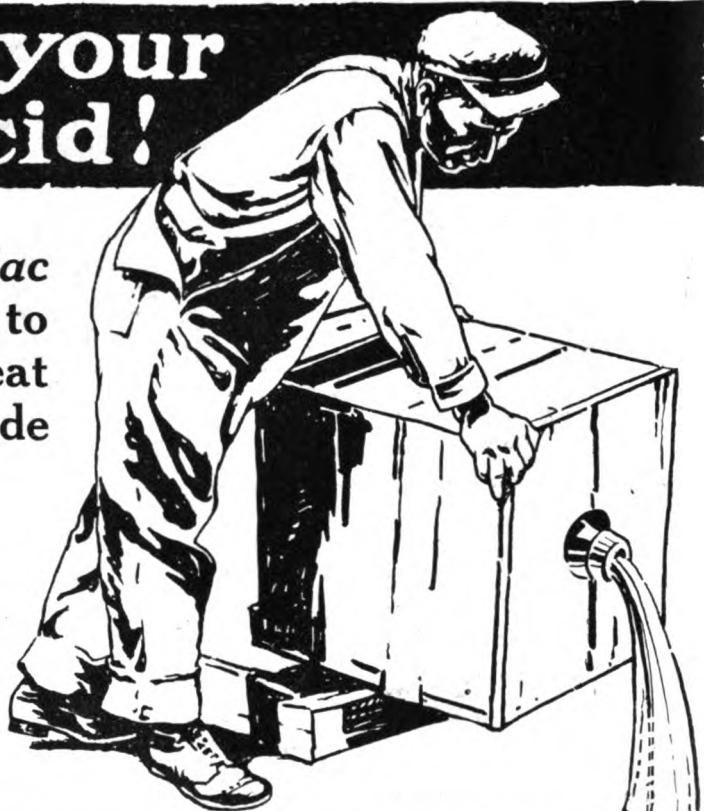
Steam heat is perhaps the ideal heat for the generator room but this is hardly feasible in the average repair shop so some other method must be evolved. One way, if the room is not too large, and may be closed up tight, is to leave a large size electric light burning all night; being sure all the windows and doors are closed to prevent the admittance of cold air. Another way is to have a leak proof flue or chimney pass through the generator room. Either method properly installed will keep the temperature above freezing.

The above suggestions should furnish the careful operator with a fair idea of how to take care of his oxygen and acetylene supply. Next month we will take up the rest of the apparatus, including gauges, regulators, torch, hose, etc.

-throw away your soldering acid!

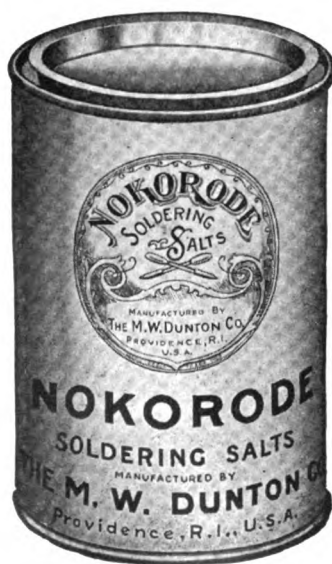
DON'T use *Sal Ammoniac* or other acid for a dip to brighten your iron; they eat up the tinning, and corrode the work.

Dissolve ONE pound of Nokorode Salts in one GALLON of distilled water; use this solution as a *dip* to clean and to *tin* the iron, as well as to *flux* the work, and you will get better work at less cost.



NOKORODE

SOLDERING PASTE AND SALTS



helped win the war. Used by U. S. Government here and "Over There" and exclusively on the telephone circuits of the Panama Canal; by 90% of the Electrical trade of the country; by the leading Aeroplane makers; all the big automobile manufacturers in America, and by the largest food packers.

Garages and Service Stations will be sent sample and particulars on request

THE M. W. DUNTON CO.
PROVIDENCE, R. I., U. S. A.

Pioneer Wire Wheel Makers

Win Success for Pasco Firm

Though young in age but old in experience, the National Wire Wheel Works, Inc., of Geneva, N. Y., is a progressive organization that deserves great credit for what it has accomplished.

The accompanying view of the factory is a good picture of the building, which is a thoroughly modern sun-light fire-proof plant. There is an esprit de corps on the

Ave., Chicago, has been handling all sales west of the Mississippi, but will now act as general sales agents for the entire United States. The Northern Electric Co. of Montreal, Canada, has been made Canadian distributor for Pasco wire wheels.

In this connection, it is quite apropos to devote some space to a discussion of the Pasco wheel, which is the predominant rea-

construction. It is intimated that the best engineers of the automotive industry concede the Pasco to be the best constructed and strongest wheel on the market. To this end, all experimental and guess-work in building the Pasco wire wheel has been eliminated.

The distinctive features of the Pasco wire wheel are as follows:

LACING.—The Pasco wire wheel has a tangent method of spoke lacing, in which each spoke crosses four others, both inside and out, thus forming a strong double web. This arrangement of spoke lacing adds greatly to the strength of the wheel, while at the same time allows flexibility. Pasco wire wheels are said to be five times stronger than wood wheels of the same size.

DRIVE.—Pasco wire wheels are driven by six special drive lugs fitted to the rear flange of the inner hubs and which penetrate corresponding drive stud holes in the rear flange of the outer wheel hub. The drive lugs do not extend through the rear flange of the wheel outer shell, but leave the shell smooth and easy to clean. This construction also prevents dirt and rust from accumulating around the drive lugs. It is impossible to apply a wheel unless the drive lugs are fitted into the corresponding holes in the shell.

HUB CAP.—Pasco hub caps are all made from white metal castings and will not rust or tarnish. They will always retain their high polish. They will not crack or col-

(Continued on page 42.)



Where Pasco Wheels Are Made.

part of employees that is largely responsible for the popularity of Pasco wheels.

Even though the present factory is large and covers considerable ground, it has proved inadequate for the business that has developed, and plans are now being made so that extensions in the facilities and production of the plant will soon be substantially increased.

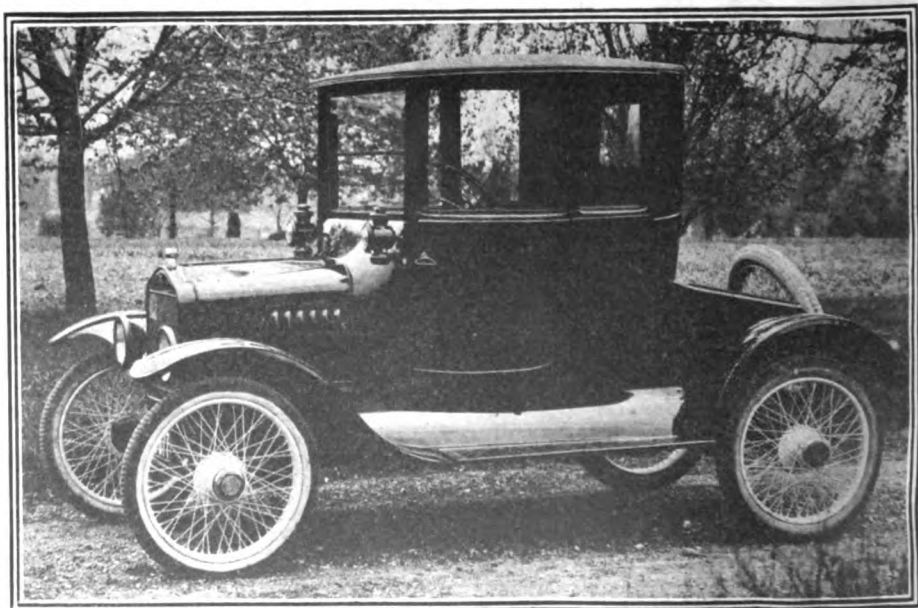
Entering the general offices, the visitor is impressed with the efficient atmosphere and industry of those who are responsible for the destinies of the National Wire Wheel Works.

The officials are pioneer wire wheel manufacturers, having been previously associated in official capacities with the Wire Wheel Corporation of America, at Buffalo, N. Y. The quartet of men who have done so much to develop the business of the National Wire Wheel Works are W. D. Van Horn, vice president and general manager; H. E. Van Horn (his son) assistant treasurer and general sales manager; C. S. Ash, chief engineer and one of the best known of his specialized training; and J. R. Matson, purchasing agent.

Branch offices have already been established in San Francisco, Seattle, Minneapolis, Kansas City, Dallas, New York, and Atlanta; soon an important sales office will be established in New York City. Hitherto the Bailey Drake Co. of 1118 S. Michigan

son why the National Wire Wheel Works found it exceedingly difficult to keep pace with the demand for same.

As a result of the efforts of the men who are conspicuously identified with the firm, the Pasco wire wheel represents the highest achievement of invention and engineering genius, it is said, and stands out as the par-excellence product in wire wheel



Ford Coupe with Pasco Wheels.

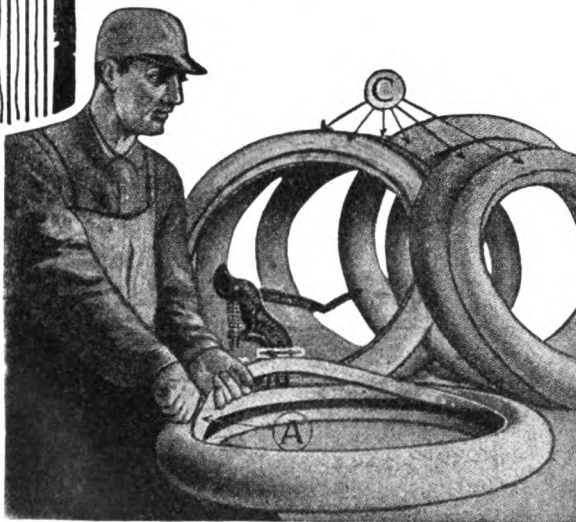
With an Ewald Tire Retreader you can make as much as \$25 profit or more per day

New Improved Double-Acting Plunger

One tire repair man writes:

"I stapled 10 casings at \$2.50 each and more than paid for the EWALD TIRE RETREADER the first day."

You can do as well, for there is plenty of this profitable business everywhere. The present prices of tires make it necessary for every car owner to get the maximum service out of them. Making one serviceable tire out of two badly worn casings is economy for the car owner and profitable for the repair man.



OUTFIT INCLUDES:

Retreading Machine,
250 Special Staples, $\frac{1}{2}$ " long,
250 Special Staples, $\frac{5}{8}$ " long,
250 Special Staples, $\frac{3}{4}$ " long,
250 Special Staples, $\frac{7}{8}$ " long,
Full Sheet of Instructions,
1 Can Tire Cement,
1 Can Talcum,
1 Cement Brush,
1 Tracing Wheel,
1 Tire Spreader,
1 Trimming Knife,
2 Rolls Rubber Reliner,
1 Shipping Box.

Price Complete as shown, \$20.00

Every garageman, repairman and tire repair shop needs it! This is your big chance for quick and substantial profits. Write today for particulars.

FACTORY SALES DEPARTMENT

THE ZINKE COMPANY

1323 S. Michigan Ave

CHICAGO, U. S. A.

MANUFACTURERS

ROMORT MANUFACTURING CO.

OAKFIELD, WIS.

CHICAGO, ILL.

Holmes Wrecking Truck Is Big Money-Maker for Towing Uses

Robert Holmes & Bros. of Danville, Ill., makes a specialty of the Holmes wrecking truck, which is particularly valuable for use by garagemen, repairmen, and owners of service stations. With the Holmes wrecking truck, disabled cars can be quickly towed in without any difficulty.

The Holmes wrecking truck is a good time and labor saver, as the truck can be used as a lever to raise the wrecked car. Any sized car can be quickly and easily drawn to the garage by simply putting the Holmes wrecking truck under either axle.

are:

Overland Automobile Co., 2309 Locust St., St. Louis, Mo.

J. Edwin Oetzell, 433 Ellicott Square, Buffalo, N. Y.

Gemco Mfg. Co., Milwaukee, Wis.

Gary Garage & Sales Co., Gary, Ind.

C. M. Ritchey Motor Co., Joplin, Mo.

Edw. Rudolph, Phoenix, Ariz.

Ortman Auto & Supply Co., Stockton, Calif.

Auto Supply Co., Detroit, Mich.

J. C. Vikstedt, Rochester, Minn.

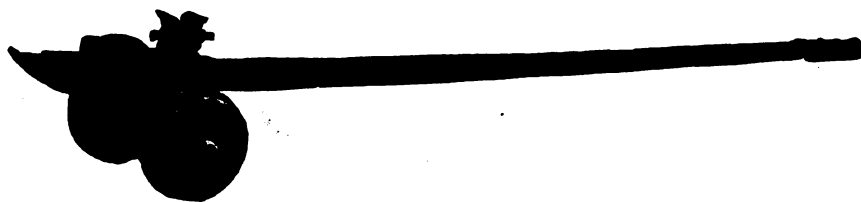
Creek Motor Sales Co., Milwaukee, Wis.
Delaware Garage, Wilmington, Del.
Western Motor Car Co., Springfield, Mo.

Malin Motor Co., 1906 E. 13th St., Cleveland, O.

Alling Rubber Co., 167 Asylum St., Hartford, Conn.

The price is \$50.00. If further information is desired, write either to the editors of the AMERICAN GARAGE & AUTO DEALER or to Robert Holmes & Bros., Danville, Ill., direct.

Never question that you will succeed, for all of us reach the goal sooner or later for which we are headed.



It is very strongly made—the frame and wheels are of malleable iron castings with Hyatt roller bearings. The tongue is of second-growth ash.

Some of the representative garages which are using Holmes wrecking trucks

Welborne & Co., Starks Bldg., Louisville, Ky.

Gregory Auto Supply Co., 509 Tremont St., Galveston, Texas.

Midway Garage, Little Rock, Ark.

Foster Garage Co., Batavia, Ill.

New dealers for the Acason Motor Truck Co., Detroit, are announced by Vice-president and Director of Sales H. A. Conlon as follows: Dixie Motor Sales Co., Memphis; Harper Bros., Hackensack, N. J.; Henderson Motor & Supply Co., Grand Rapids, Mich.; Redwine Bros. Motor Co., Spiro, Okla., and Fort Smith, Ark.; Hawkins Russell Motor Co., Atlanta; W. H. Gibbons, St. Thomas, Ontario, Canada; Bonner Acason Co., Norfolk, Va.; Ohio Oldsmobile Co., Cleveland, and Sloan Motor Co., Greensboro, N. C.

LOCAL SHOWS WILL BE HELD; CHICAGO AND NEW YORK IN LINE

(Continued from page 10.)

Resolved, That there be brought about as far as possible new features to impress upon the public the development and growth of the automobile industry.

Resolved, That so far as practicable the expositions present divergence from the stereotyped form which previous expositions have sometimes taken.

Advertising.

Whereas, Advertising has been one of the greatest contributing factors to the building and development of the automobile industry into becoming the third greatest manufacturing industry in the world, and

Whereas, The advertising done by the various factories in the automobile industry has been not merely aggressive but dominating,

Therefore, be it resolved, That it be the sense of the National Association of Automobile Show Managers that aggressive advertising campaigns be executed in order that the automobile industry may take no backward step but that it continue in an aggressive and progressive manner.

Trade Conventions.

Whereas, Of late years automobile shows have become less and less mere exhibitions and have taken on more and more the qualities of important trade gatherings and conventions, and

Whereas, Great benefit has been received by the trade individually and collectively therefrom, and whereas this development of the automobile shows has created a better impression on the general public.

Therefore, be it resolved, That in cities where shows are to be held, that the members of the National Association of Automobile Show Managers through their

respective associations bring about a greater trend toward this convention idea, and

Be it resolved, further, That there be arranged meetings and conventions for the discussion of trade problems and the development of ideas which will bring about immediate benefits and provide for future substantial development of the industry.

OWNERS OR DEALERS AS SHOWMEN?

(Continued from page 11.)

to their customers and prospective buyers of their cars.

Automobile dealers believe that work requiring special knowledge should be done by professionals rather than by amateurs. As every enterprising automobile dealer conducts a show in his own retail establishment every day of the year, the tradesmen are more entitled to the rating of professionals in show matters than are owners of cars.

To sum the whole thing up the primary purpose of holding automobile shows in these days is to sell more cars, and the dealers as being the persons most vitally interested are best fitted to conduct them. In the early days shows were regarded as social affairs and as an opportunity to gaze at close quarters on wealthy folks and their playthings by many visitors who had little hope of ever owning a car.

Shows held in these days should be more than exhibitions of cars alone. They ought to be automotive exhibitions. Trucks, tractors, trailers, and accessories should be included among the things displayed whenever it is possible to obtain enough room to show anything else except a few passenger cars.

Service

CAR owners will generally estimate the quality of your service by the quality of the product you sell.

Satisfaction to car owners—satisfaction and profit to dealers—that is the ultimate aim of Harvey Service.



THERE'S A HARVEY JOBBER NEAR YOU
Our new catalogue giving Complete measurements
of over 900 Styles of Springs is yours on request

**HARVEY SPRING
& FORGING CO.**

922-17th Street

RACINE, WIS.

PEACE and PASCO

have a close connection. For months our biggest duty has been to rush PASCO wire wheels to waiting aeroplanes. But with the coming of PEACE we will gradually be able to devote our efforts again to the automobile industry.

The experience, investigation, and research coincident with war work, have taught us many things about wire wheels—have convinced us, more than ever, that PASCO wheels are **worthy** wheels. In field and air they have **made good** splendidly.

And now, in PEACE TIMES, the PASCO economy, staunchness, convenience, and PASCO beauty will gain more converts than ever before. If you are unfamiliar with the indestructible hub cap, the ingenious safety-locking device, and the unique tangent method of spoke-lacing—examine a PASCO wire wheel. You will be interested, surely.

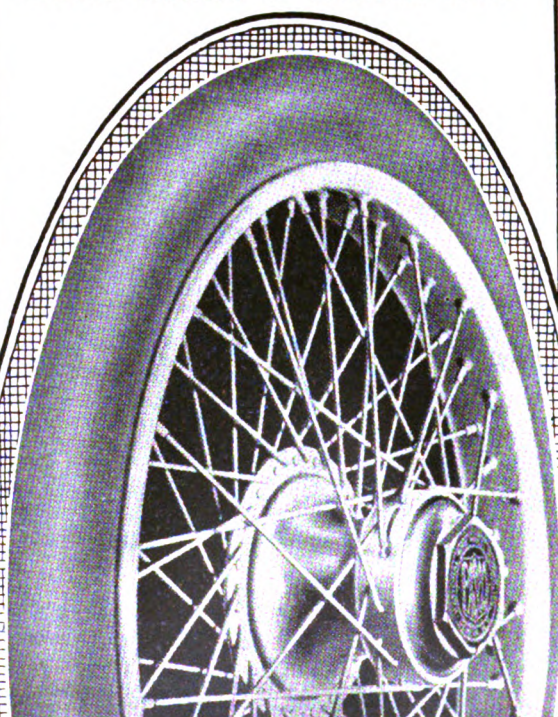
DEALERS: You cannot begin too soon to develop a trade on PASCOS. Wire or write to-day for details. A few agencies still open.

NATIONAL WIRE WHEEL WORKS

DEPT. C

GENEVA, N. Y.

SERVICE STATIONS IN PRINCIPAL CITIES



Accessories and Garage Equipment

THREE GUARANTEES FOR USERS OF IRONCLAD KHAKI GARMENTS.

Ironclad Khaki has been made for many years by the Franklin Manufacturing Company, Baltimore, Md. This twill cotton cloth has long borne an enviable reputation for its excellent wearing and fade-proof qualities.

"Wears like leather and covered by three guarantees." That's how its manufacturers advertise it. The cloth is made "Ironclad," then guaranteed so by three actual guarantees—one on the bolt goods to protect the garment manufacturer, two furnished the garment manufacturer to place in the garment to guarantee the cloth to the wearer.

Ironclad Khaki is *not* a yardage proposition. It is sold to the garment manufacturers who make it up into uniforms of all sorts including uniforms for the Army, pants, jumpers, overalls, coveralls, sport clothes, etc.

Following are some of the brands: Ironclad Dreadnaught twills, artillery cloth, Rough Rider special, Volunteer, Infantry cloth, etc., and Miss Ironclad Khaki, the special woman's over-all cloth.

Ironclad Khaki is being extensively advertised, by the Franklin Manufacturing Company in the agricultural and industrial press to stimulate the sale of Ironclad Khaki garments. You will notice that the advertisements say, "Garments on sale by dealers everywhere. We are makers of the cloth only."

To be sure of getting garments made of the genuine Ironclad Khaki cloth the purchaser is urged before buying to look in the garment for the yellow army label and the guarantee bond issue by the makers of the cloth.

If any further information is desired by our readers, the Franklin Mfg. Co., 133 Market Place, Baltimore, Md., will be glad to supply it upon request if the name of the AMERICAN GARAGE & AUTO DEALER is mentioned when writing.

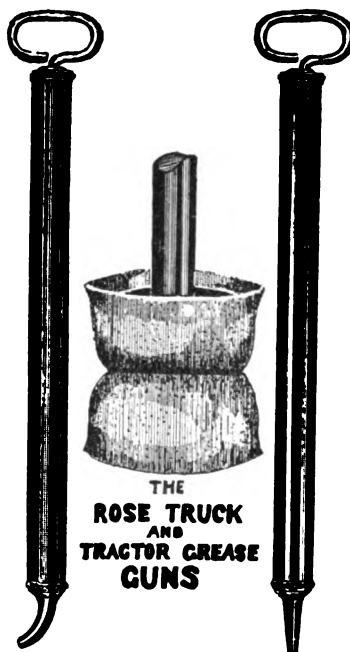
ATWELL TO SELL GRIPSIT PATCH IN SOUTHERN TERRITORY.

Gordon G. Atwell, not inc., of Nacogdoches, Tex., has added to his lines the sale of Gripsit Auto Patch. A short time ago this concern took up the southern sales of the Van Spring Oiler Co. of Chicago and will

handle Gripsit in addition to the Van line in all southern states except Louisiana. Mr. Atwell can use jobbers in every large town and trading center and a few more men to travel and call on dealers and jobbers.

TRUCK AND TRACTOR GREASE GUN PRODUCED BY HANEY CONCERN.

J. H. Haney & Co. of Hastings, Nebr., are now manufacturing a new grease gun designed especially for use with the truck and tractor. This article fills a long felt need and should meet with a ready sale.



THE
ROSE TRUCK
AND
TRACTOR GREASE
GUNS

The gun is all steel, making it practically indestructible with ordinary use. Regular equipment is one curved nozzle, however other styles can be furnished if requested. Kindly mention the AMERICAN GARAGE & AUTO DEALER when writing for further particulars.

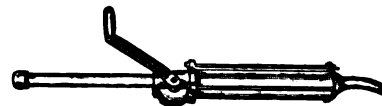
BOE CONCERN HAS NEW TYPES OF GREASE GUNS AND PUMPS.

A new grease pump and a new combination grease and oil gun have just been produced by the H. M. Boe Co. The pump, which is styled the "Boe Repeater," is a crank operated, gear and action pump, which dispenses and accurately measures either grease or oil either by the pound or by the pint. It is operated by turning a crank. The measuring is governed by a 5-inch meter dial plainly readable through a large opening in the cover and does not depend on the pump stroke for measuring.

The measuring will pass state inspection, the makers declare. It dispenses about 24 ounces of lubricant to each pump stroke. The pump is made in three sizes: No. 1 to hold 25 pounds of grease or 3½ gallons of oil; No. 2 to hold 50 pounds of grease or 7 gallons of oil, and No. 3 to hold 100 pounds of grease or 14 gallons of oil.

The combination instrument is called the "Improved Rapid Fire Grease Gun" and is a quick, crank operated, gear action rack and

pinion gun. The barrel is made of seamless steel tubing with a new self-acting tension plunger that will load and discharge heavy as well as light lubricants. All gears and moving parts of the gun are enclosed. The capacity is 24 ounces to each stroke of the pump.

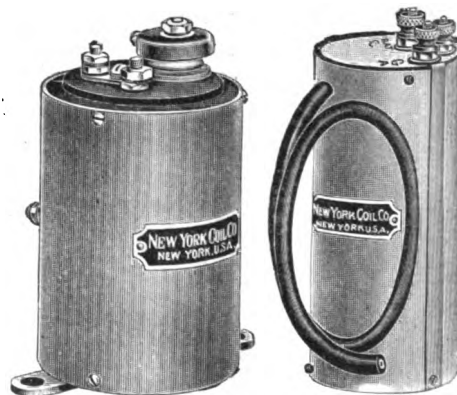


Readers desiring full particulars and trade prices can obtain them from H. M. Boe Co., 2416 University Ave., S. E., Minneapolis, Minn., by mentioning the AMERICAN GARAGE & AUTO DEALER when writing.

NEW YORK COIL COMPANY HAS LINE OF REPLACEMENT COILS.

The New York Coil Co. announces a line of coils the concern has been manufacturing for some time, that replace spark coils used on all standard cars in use today, or that have been in use for the past four years.

It is pointed out that there is a tremendous demand and field, as many cars of today use coils for ignition, and the dealer or service station operator is now enabled to procure a coil for each requirement without the delay and annoyance which was heretofore necessary. By carrying a small stock, a defective coil may be replaced in a few minutes, which is a great satisfaction to the owner.



Type A

Type B

These coils are all supplied with brackets to adapt their instant installation in place of the coil removed without work of any other nature. The Gray-Heath Co., 1440 Michigan Ave., Chicago, is western distributor of these coils.

The resistance units supplied are interchangeable with the standard units in use today, and all coils supply an unusually heavy spark and operate on very low voltages. This is an advantage of extreme importance when the storage battery has fallen in strength. All coils, it is claimed, give a powerful ignition spark on four volts or less. A line of these coils is manufactured which takes care of practically every car in use and upon request pamphlet will be mailed, showing the proper coil for each car.

The list price on any model is \$10.00, but trade prices can be obtained by writing to the New York Coil Co., 340 Pearl St., New York City. Inquiries are invited from garages, service stations, repair shops, and accessory dealers. Kindly mention the AMERICAN GARAGE & AUTO DEALER when writing.

Inquiry Coupon.

Readers of this paper are invited to ask us for information concerning anything described in its pages or about any motor vehicle parts or accessories. This information will be furnished whether or not the requests come from subscribers.

American Garage & Auto Dealer,
116 S. Michigan Avenue,
Chicago, Ill.

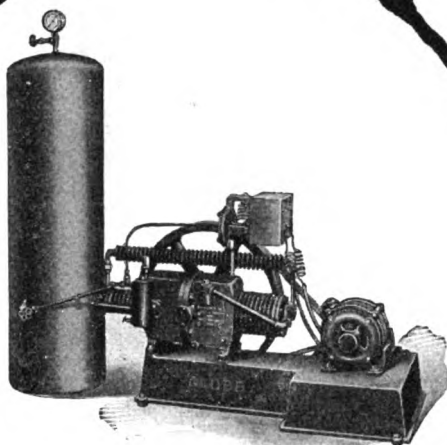
Please supply me with information as to trade discount and nearest source of obtaining the articles given below:

.....
.....
.....

Name
Address

GLOBE

QUALITY
means
CLEAN AIR SERVICE



The installation of air equipment does not simply mean air compressors. You must protect yours and your customers' interests by supplying "clean air" free from oil.

GLOBE AIR COMPRESSORS are so constructed that it is impossible for the slightest bit of oil to reach the tire.

GLOBE TWO STAGE AIR COMPRESSORS represent the most economical service for garagemen.

GLOBE AIR COMPRESSORS give constant and efficient service. They last longer and are, therefore, cheaper.

The GLOBE UNLOADER is an exclusive feature that permits the starting of compressor without load. This device avoids the danger of burning your motor or the throwing or burning of belts. It also automatically drains the oil tap every time the compressor is stopped.

ALL TYPES OF AIR COMPRESSORS

Write us your air compressor requirements and let us recommend an economical and suitable outfit for your purpose.

Write us today for free illustrated literature.

GLOBE MANUFACTURING CO.
BATTLE CREEK MICHIGAN



AUTO BOOKS

New Edition 7¢ A Day

Now ready for you—this marvelous five-volume Library on Automobile Engineering! The newly written reference work covering the construction, care and repair of pleasure cars, motor trucks and motorcycles. The most complete and advanced information in Ignition, Starting and Lighting Systems, Garage Design and Equipment, Welding and other Repair Methods. Five wonderful volumes

beautifully bound in flexible covers, gold stamped, 2400 pages (5½x8½ in.), 2000 illustrations, tables and explanatory diagrams. This great automobile library, combining the knowledge of the greatest experts in the business, now yours on payments so small as to average only 50c a week, or only 7c a day.

SHIPPED FREE

No money in advance. Not a cent. See the books in your own home or shop absolutely free, at our risk. Read them, examine them, study them for seven whole days before you need decide whether you want to keep them or not. Send no money to get the books for free examination. Make no deposit. Assume no obligation. Simply put your name and address on the coupon below and mail it to us. The books will be promptly shipped to you for your examination. Take seven days to ascertain their value to you. If you are not more than delighted with them and do not consider the books one of the biggest bargains you ever made, just send them back to us and you won't owe us a penny. If you value the books and see them to be worth many times their price to you, send only \$2 in seven days, and then \$2 a month until the special introductory price of \$17.80 has been paid.

Send No Money

Every repair man, every auto mechanic, every auto driver and owner will prize this magnificent library. Even the most experienced veteran in the business will find a wealth of practical information and help in this work. Prove their value to yourself at our risk. See the books without cost or obligation to you. Not a cent do you risk by sending the coupon. So do it today—NOW—while this special offer is open. You have nothing to lose, and much to gain.

AMERICAN TECHNICAL SOCIETY

Dept. A-7869, CHICAGO, ILLINOIS

American Technical Society,
Dept. A-7869, Chicago, Illinois.

Please send me the 5-volume Automobile Engineering for 7 days' examination, shipping charges collect. If I decide to buy, I will send \$2 within 7 days and the balance at \$2 a month until the \$17.80 has been paid. Then you send me a receipt showing that the \$25.00 set of books and the \$12 Consulting Membership are mine and fully paid for. If I think I can get along without the books after the seven days' trial I will return them at your expense.

Name

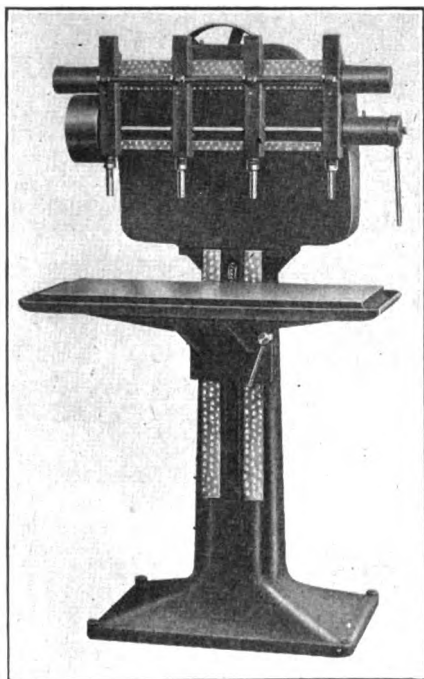
Address..... Reference.....

FREE CONSULTING SERVICE

With each set we give you free, a year's Consulting Membership in the American Technical Society. The regular price is \$12. Put your problems up to our Staff of Experts, for one entire year.

DEFIANCE GRINDER WORKS ON**4, 6 OR 8 VALVE SEATS AT ONCE.**

The number 50 valve grinding machine produced by the Defiance Machine Works is made with 4, 6 or 8 grinding spindles. This machine will grind all the valve seats in a gas engine cylinder block, of various types, at one time. Special heads can also be obtained to grind the seats of the staggered type of valve. All that is required of the operator during the grinding operation is to press lightly on a lever to hold the valve head drivers down against a regulated spring tension.



The table, to which fixtures for holding cylinders are clamped, is rigidly gibbed to the base column and has a binder screw for clamping at any position on the column. The spindles are ground true and fitted in sleeves. They ride on a race of ball bearings at both top and bottom ends. The method used to obtain the oscillating movement is obtained by the use of spur gears and sliding rod, which is said to eliminate all vibration and excessive lateral thrust.

Full particulars and trade prices can be obtained by writing to the Defiance Machine Works, Defiance, Ohio, and mentioning the AMERICAN GARAGE & AUTO DEALER.

FOSTER AUTO REPAIR CREEPER.

Foster Bros. Mfg. Co. of Utica, N. Y., has marketed an all metal creeper, which is just the thing for garage or automobile repair shop use.

The body of the repairman is supported comfortably on a galvanized link fabric spring. His head and neck rest on a durably covered cotton-filled pillow. The "give" of the spring, which conforms to his body, allows freer operation and means more actual working room under the car. This all metal creeper, which is practically indestructible, as comfortable as a bed, and which is freely movable, because of ball bearing casters, is better suited to garage use than the wooden creeper, which has a time limit on its period of usefulness. Without changing position, the workman can anchor the creeper so

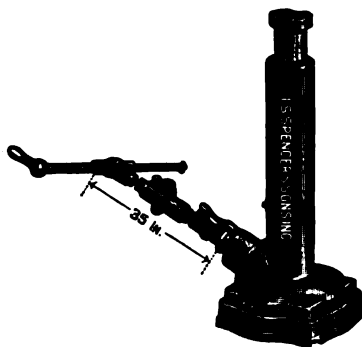
firmly that he can exert his fullest strength.

It is thoroughly reinforced, to stand up under severe use and abuse. Metallic throughout. Figuring its cost over the period of its service, it is the cheapest creeper on the market. It provides efficiency under the car. Makes it possible to do work thoroughly, besides comfortably.

Were it not for the Foster auto repair creeper, some garagemen say that they would find repair work under the car exceedingly difficult. At \$4.00, the Foster Auto Repair Creeper is within reach of any small or large city garage, repair shop, or service station. All orders will be promptly filled if the AMERICAN GARAGE & AUTO DEALER is mentioned. Address Foster Bros. Mfg. Co., Utica, N. Y.

ACME JACK HAS WIDE BASE.

The fault with some jacks that the base is so small they tip over at times when being used to raise cars has been guarded against in the design of the Acme automobile jack. The Acme will lift the heaviest car with ease, and is constructed with a wide, heavy base that does away with the danger of the jack tipping to one side or another, allowing a car to fall back down on to the ground.

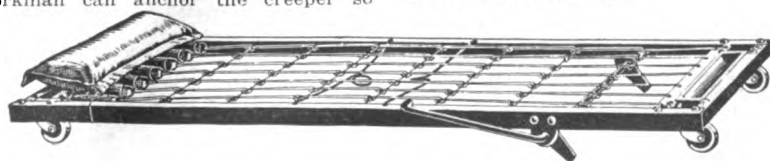


The handle of the jack can be extended until it is 35 inches long, but the handle folds to 18 inches. The jack has ten one-half inch ball bearings. All of its moving parts run in heavy grease, and all are completely covered. Readers who desire fuller particulars and trade prices can obtain them by writing to I. S. Spencer's Sons, Inc., Gullford, Conn., and mentioning the AMERICAN GARAGE & AUTO DEALER.

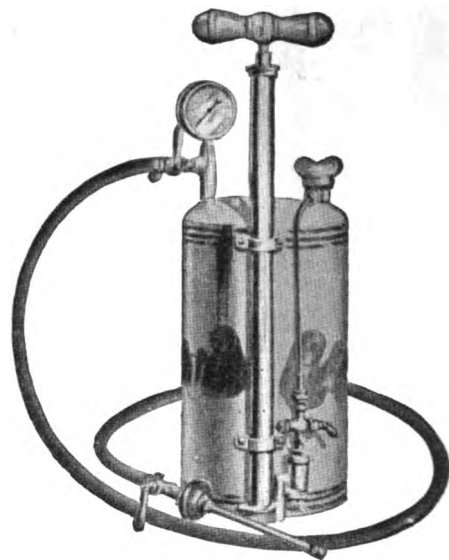
Cut-Out Swivel Joint for Jobbers' Salesmen

F. W. Stewart, manufacturer of a number of live items in the accessory line, is putting out a novel idea for the jobbers' salesmen in a sample swivel joint having the sections cut out showing the advantages in their particular type over others. Jobbers' salesmen are being furnished with these cut-out samples to show their trade.

Jobbers can get these by writing to F. W. Stewart, 1402 S. Michigan Ave., Chicago, mentioning the AMERICAN GARAGE & AUTO DEALER.

**Eureka Engine Cleaner Works Without Splashing**

While designed primarily for cleaning automobile engines, the Eureka engine cleaner may be used for removing dirt and grease from machinery of almost any sort. It does its work rapidly and thoroughly. Careful provision has been made so there is no danger of soiling clothing during the cleaning process, the long spray nozzle reaching down into the parts and cutting away the dirt without splashing.



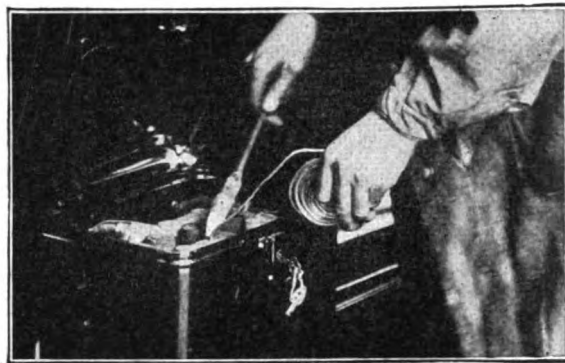
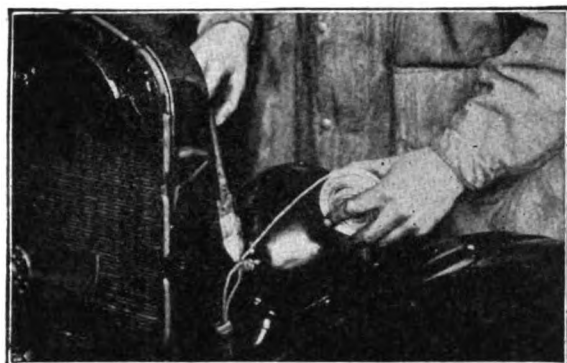
The outfit consists of a 3-gallon tank with a spray nozzle attached to the end of a 10-foot section of rubber tubing. The tank—a seamless galvanized steel one—has a special hand pump attached to it and there is a pressure gauge and safety valve, as well as a cock on the spray nozzle.

The tank is first filled two-thirds full of either gasoline or kerosene, the outlet cock is closed and then a pressure of from 80 to 100 pounds pumped up. Next the air inlet cock is closed, the other air cocks opened and the spraying can be started, the spray being controlled by the cock on the nozzle. Cleaning should always be done in the open air and the parts cleaned and oiled afterward.

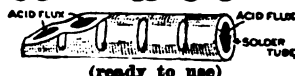
The outfit is packed ready for use. The manufacturers, The Bishop and Babcock Co., Cleveland, Ohio, will send catalogue and trade prices upon request if the AMERICAN GARAGE & AUTO DEALER is mentioned.

VACUUM MUFFLERS FOR TRACTORS AND AIRPLANES.

Vacuum mufflers are now made for tractors, motor trucks, farm lighting plants, motor boats and airplanes as well as for passenger cars. General Manager C. S. Shuman announces that the Vacuum Muffler Corporation of New York has changed its name to the Vacuum Muffler Corporation of America and increased its capital stock to \$200,000. The officers are: President and treasurer, Oluf Klaer; vice-president, Gunnar Hartman; secretary, D. K. Keller; general manager, C. S. Shuman; Board of Directors, Erling Christophersen, T. Langland Thompson and Messrs. Klaer, Hartman and Keller.



Users are the best boosters!



"Kester Acid Core Wire Solder is the solder for the busy man and the hurry up job!"

(writes J.E. VORE of Lima Ohio)

This is one of the many typical letters which we constantly receive, showing the value of Kester Acid-Core Wire Solder, for general automobile work. It will do any job quickly, satisfactorily, and with a saving of labor and material.

Sold on 1, 5, and 10 pound spools, or in 1 pound coils.

ORDER OF YOUR JOBBER OR DIRECT!

CHICAGO SOLDER CO
CHICAGO, U.S.A.



CARBON FORMATION

Carbon Formation is the bugbear of motorists. Leaky valves, fouled spark plugs, pre-ignition, these evils are the results of lubricating oil entering the combustion chamber.

The joint of the GILL PISTON RING is so constructed that it is impossible for lubricating oil to pass through—under or by it.

Ask your jobber or write for literature

GILL MANUFACTURING COMPANY

351 West 59th Street

CHICAGO, ILLINOIS

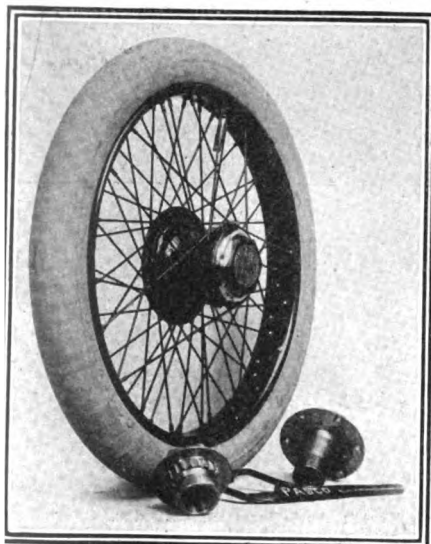
The PERFECT ONE PIECE PISTON RING.

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

PIONEER WIRE WHEEL MAKERS WIN SUCCESS FOR PASCO FIRM

(Continued from page 34.)

lapse when coming in contact with other vehicles, which oftentimes occurs in crowded traffic.



A Pasco Wheel and Wrench.

LOCKING DEVICE—The locking device used on the Pasco wheel is a marked improvement in wire wheel construction, as it is absolutely positive, making it im-

possible for a wheel to loosen while in motion. This is insurance against accidents.

As it is quite evident by referring to the picture showing a car equipped with Pasco wheels, nothing adds so much to the distinctiveness of a car as a set of these wheels; whether black or white, cream, primrose, yellow, vermillion, light green, maroon or gray an air of richness—of aristocracy—is obtained that is lacking in the old style wooden wheel.

Another big advantage about Pasco wire wheels for either automotive merchants or their customers, is that they average two and three miles more per gallon of gasoline. The reason is plain: Pasco wheels

weigh less than the same size wooden wheels. Thus a "Pasco equipped car" has quicker "get away" and "stopping" qualities. That means less horsepower to start and stop a car—less fuel consumption. The speed and ease with which Pasco wire wheels can be removed from the axle make the inaccessible axle parts, such as the steering knuckle and springs of front axle, brake

drum and spring connections, readily accessible and convenient to wash and clean thoroughly. Pasco wheels can be changed on the road in less than three minutes. There is only one operation necessary in removing the wheel and that is to unscrew the hub cap.

As dealers are desired, it is suggested that all of those who are interested send for full dealer particulars, to the National Wire Wheel Works, Geneva, N. Y., mentioning the AMERICAN GARAGE & AUTO DEALER.

Subscribers protect their interests by mentioning AMERICAN GARAGE & AUTO DEALER when writing advertisers.



New Era "Better" Springs Stop The Breakage

New Era "Better" Springs are fully guaranteed, without restrictions, against sagging or breakage for one year and guaranteed to match in load depression the other springs on the car.

Dealers everywhere sell them. Demand New Era "Better" Springs for your car.

New Era Spring & Specialty Company
1152 Hamilton Ave., Grand Rapids, Michigan.

You get a good share of the profit.

The **MODEL "N" MARVEL CARBURETER** improves car performance, and increases mileage from 22 to 25 miles per gallon.

No changes are necessary to install it. Fits right in place of regular installation.

MARVEL CARBURETER

Designed especially for FORDS

sold on 30 days' trial, with money back if not satisfactory.

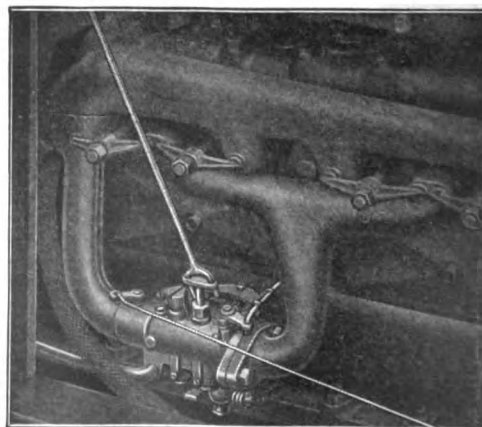
Retails for \$9.00 complete.

MODEL "E" CARBURETERS are standard on Buick, Oakland, Nash, Scripps Booth, GMC, Wilson and all $\frac{3}{4}$ -ton U. S. A. Government Trucks.

MODEL "E" Carbureters greatly improve Overland and Studebaker cars.

DEALERS--If interested, write for further information

MARVEL CARBURETER COMPANY
FLINT, MICHIGAN, U. S. A.



Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers.

"RELCO"

The Ultimate Automobile Lock

The lock that the motoring public has been waiting for. Gives absolute protection. Adaptable to any make of car other than Fords. Mechanically a wonder. Fitted with the King-Multiple-Tumbler Lock, capable of countless variations and for which no master key can be made. A half turn at the key locks or unlocks it without moving the lock from its position on the steering shaft. Once locked, car cannot be driven or towed. Powerfully made—no thief with a hammer can break the "RELCO."

Approved by the Underwriters' Laboratories, and affords 15% discount on insurance.

DEALERS: You will find a ready market for the "RELCO" Lock. Your profit is liberal. We also manufacture the famous MUELLER LOCK for FORDS.

Write today for particulars.

THE RELIANCE COMPANY

411-417 So. Sangamon St.,

CHICAGO, ILL.

Distributors in every state

Like Aladdin's Magic WE MAKE NEW TIRES FROM OLD.

Your customers can get another 5,000 miles out of their old tires, and it makes no difference whether they are sand blistered, punctured, rim cut, or blown out—McDANIEL WILL MAKE THEM LIKE NEW.

Tire dealers and garage-men should write us for our special and attractive proposition.

With new tires becoming scarce, and rubber production greatly curtailed, you can make liberal profits representing us.

Simply send old tires prepaid to the address below, with your name and address attached.

Write at once for our proposition.

LEO McDANIEL RUBBER CO.
804 COMMERCIAL AVE. — CAIRO ILL.

SIZE	If You furnish 2 Casings	If You furnish 1 Casing	If I furnish Both Casings	Special Gray Tubes
30x3	\$3.25	\$5.00	\$6.75	\$1.90
30x3½	4.00	6.00	7.25	2.40
32x3½	4.25	7.25	9.00	2.55
31x4	4.50	7.75	9.50	3.10
32x4	4.75	8.00	10.00	3.20
33x4	5.25	8.25	10.25	3.30
34x4	5.50	8.50	10.50	3.40
36x4	5.75	8.75	11.00	3.50
34x4½	5.75	9.00	11.50	4.10
35x4½	5.75	9.25	12.00	4.25
36x4½	6.00	9.50	12.50	4.35
35x5	6.25	10.50	13.50	5.00
37x5	6.50	11.50	15.00	5.40



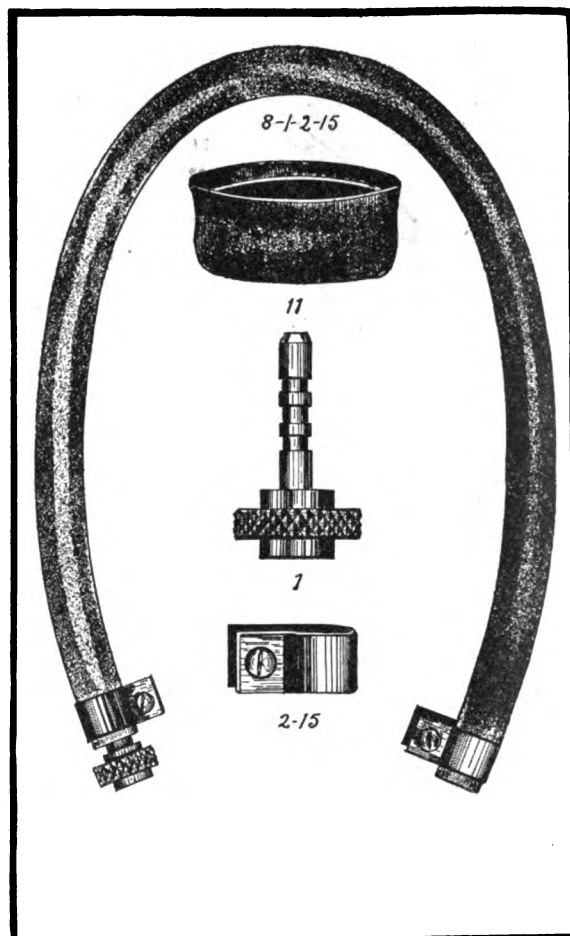
THE ROSE TIRE PUMP



The Rose Tire Pump is built to meet the demand for a better tire pump

and

over 1,000,000 are in use today. We hope to have 3,000,000 in use at the close of 1919.



Many

of the pumps in use need repair.

Are you stocking repair parts for Rose pumps? Repair parts are finding ready sale, and it will pay you to stock them **now**.

We can make immediate shipment.

Envelope inserts of Repair Parts with your imprint. Electros for 1919 catalog

Manufactured by

J. H. HANEY & CO.

Dept. A

HASTINGS, NEBR.



It's a happy garageman who has a HOLMES WRECKING TRUCK

This advertisement actually expresses the attitude of hundreds of garagemen and repairmen who have a HOLMES WRECKING TRUCK.

Regardless of the wrecked condition of the car, it can be readily "towed in" with a HOLMES.

Staunchly built, frame and wheels of malleable iron castings, Hyatt roller bearing for wheels and tongue of second growth ash.

PRICE, \$50.00

Special Discounts to Garages and Dealers.

ROBERT HOLMES & BROS.
DANVILLE, ILLINOIS

No wasted "Free Air"

SNAP! When the inflating valve is removed the **AIR PRESSURE STOPS**

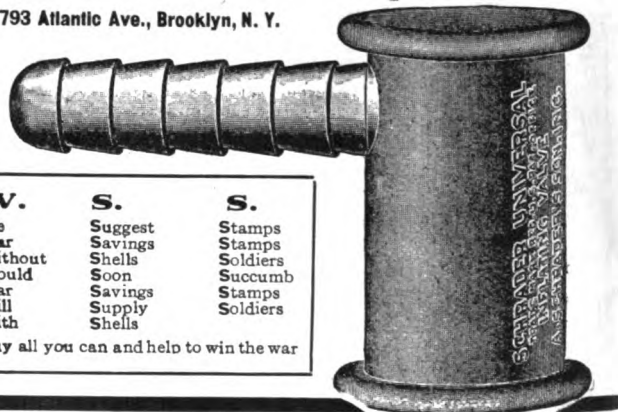
All garages and repair shops distributing free air can profitably use the

SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from $\frac{1}{4}$ to $\frac{3}{4}$ inch. Price, \$1.50.

A. SCHRADER'S SON, Inc.

783-793 Atlantic Ave., Brooklyn, N. Y.



W.	S.	S.
We	Suggest	Stamps
War	Savings	Stamps
Without	Shells	Soldiers
Would	Soon	Succumb
War	Savings	Stamps
Will	Supply	Soldiers
With	Shells	

Buy all you can and help to win the war

AMPECO PRODUCTS

Sell readily because their superiority is well known to the Motoring Public

AMPECO PISTONS for FORDS

Make the Ford motor flexible and smooth running—provide greater power and increased speed. AMPECO Pistons are uniform in weight, mechanically accurate and true to measurements.

MARSHALLTOWN CUTOUTS are made to satisfy the most exacting demands. Valve has beveled knife edge that insures tight closing at all times. The longer used the tighter the valve becomes. We also make the famous AMPECO WHEEL PULLERS and BRAKE SHOES, both one- and two-piece.

If your jobber does not handle AMPECO Products, write us direct.

F. H. & S. COMPANY, 624 So. Michigan Blvd., Chicago

General Selling Agent for

American Machine Products Co.

Marshalltown, Iowa



Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

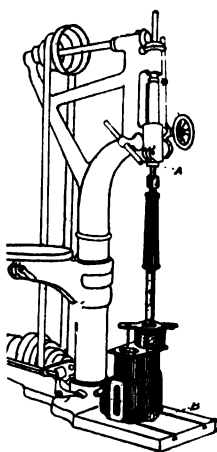
Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

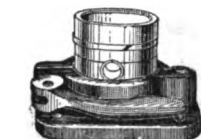
General Factory, 5100 to 5112 West 16th St.
Main Office, Leavitt St. and Jackson Blvd.

Pondelick Brothers, CHICAGO ILLINOIS

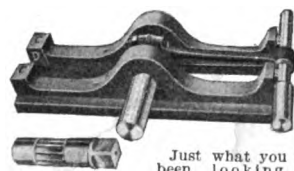
Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers



The Storm Piston Vise



Hold the Pistons firmly while repairing or replacing bushings, pins, rings and rods. Saves time and prevents damage.



Just what you have been looking for! Makes accurate fitting bearings and insures perfect alignment. With it your cheapest man can do expert bearing work.

We also manufacture the Storm Valve Tool, Special Pistons, Etc.

For Sale by Leading Jobbers. Write for Catalog.

STORM MFG CO.

1714 4th Street

THOMPSON, IOWA

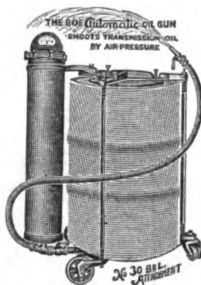
Why Not Make Any BARREL a Portable Self-Measuring TANK?



OUR BARREL ATTACHMENT

truck with steel reinforcing plates for barrel heads and air-pressure solved it.

Dispenses and accurately measures fluid or semi-fluid oil directly from original barrel into oiling system of autos, etc., simply by operator opening a shut-off valve.



ALSO MANUFACTURERS OF THE WELL KNOWN BOE AUTOMATIC (air pressure, self-measuring) GREASE GUN, 27 lb., 32 lb. and 100 lb. capacity.

Used by thousands of garagemen, also by Uncle Sam and by nearly all leading automobile manufacturers.

For sale by jobbers throughout the U. S. and in foreign countries.

Write us

H. M. BOE COMPANY
2416 University Ave. S. E.
MINNEAPOLIS MINNESOTA

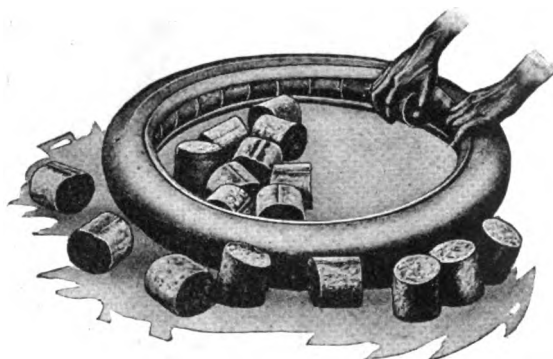
National Needs

have made curtailment of rubber imports necessary. Already the excess of demand over supply has caused an increase in tire prices—other increases are imminent.

It's Time Now for Economy

If your heart is in this war, you will clearly see the need of getting the last fraction of a mile out of your tires. You can do so by coupling your patriotism up with

National Tire Filler



Motorists Have No Tire Trouble Who Ride on This Perfect Substitute for Air

Rim-cut-proof, blowout-proof, puncture-proof tires are now a reality. Motoring is now freed from the shackles of tire trouble, and is made safe, comfortable and enjoyable.

National Rubber Tire Filler replaces the inner tube. It has all the resiliency of an air-filled tire with none of its disadvantages. It lasts indefinitely—40,000 miles or more. It has been in use for five years and has conclusively proven its superiority and economy over air-filled tires. Our factory taxed to capacity is proof positive of its great popularity.

**It rides as easy as air.
It cannot puncture or blowout.
It can be used on all style tires.
It doubles tire mileage.
It is easily installed.
It stimulates motoring.**

National Rubber Filler Company
210 College Street Midlothian, Texas

GANSCHOW GEARS

for service and reliability

The quality of our gears is almost proverbial in the automobile trade. Our unexcelled facilities and broad experience enable us to give you the most efficient service and engineering advice on every kind of automobile gears and transmissions.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or foreign manufacture. Workmanship and quality guaranteed.

Write today and feel free to consult our Engineering Department.

Wm. Ganschow Company

1002 Washington Boulevard
Chicago, Illinois



MONOGRAM OILS & GREASES

Does your garage sell them? If not, you are not "cashing in" to the fullest extent on your oil and grease business.

Write today
for full
particulars.

**NEW YORK
LUBRICATING
OIL COMPANY**

NEW YORK - CHICAGO

Branches in
Principal cities



Smooth as the flight of the birds



going South for the Winter is the progress of the Ford equipped with

**W. & C.
Shock Absorbers**

The 200,000 Fords equipped with these Shock Absorbers is adequate proof of their superiority. There are thousands sold every month.

DEALERS: Every Ford owner is a likely prospect for W. & C. Shock Absorbers. The expenditure of \$10.00 adds many times that amount to the life of the car, to say nothing of the comfort afforded.

The margin of profit to you is unusually liberal.

Write today for our dealer offer.

P. H. WEBBER CO.

Hoopestown, Ill.



Indispensable, around the soldering shop—

Over 5000 mighty bright soldering men say they have learned a lot from

**SOLDERING
KINKS**

ILLUSTRATED

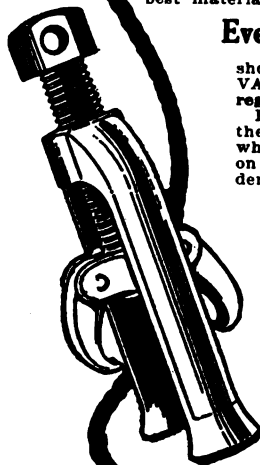
If you need it send your quarter to

Telephony Pub. Co.
116 South Michigan Avenue, Chicago

You never can tell when the BUFFUM PATENT BUICK VALVE REMOVER will come in handy

for, like the man with the gun from Texas, you don't need it often, but when you do you want it bad.

It is the only device that will properly remove the valve from assembly from the Buick motor. It is quick, sure and safe, obviating the danger of bending washers, valve stems and valve springs, or breaking the valve cage. The getting of any of these parts thus broken may lay up your car for days and weeks. Fits Buick motors of all sizes since 1912. Strongly built of the best materials, yet is light and compact.



Every Garage and Repair Shop

should have a BUFFUM BUICK VALVE REMOVER as part of its regular equipment.

Every accessory dealer should carry them in stock to supply Buick owners who need them, and will buy them on sight. The sales and repeat orders have proven it a good buy.

Retail price, \$2.00 Fully guaranteed. Packed one in a box ready to hand customer.

Use Buffum Auto Tools. "The Finest and Largest Line of High Grade Automobile Tools in the World."

BUFFUM TOOL CO.

Factory and General Offices
4th and N. Carolina St.
LOUISIANA, MO., U. S. A.

MONEY-MAKING MOTORS and BATTERY CHARGERS

Use HB
Ball-Bearing
Electric
Motors



Wherever current is available, the electric motor is the ideal source of power for garage work, for machine shop or factory. HB Ball-Bearing Electric Motors are smooth-running, economical and efficient. Ample in capacity, sturdy and dependable. Easy to operate and require little or no attention. Built to save money and make money for you. Sizes to meet all requirements from 1/2 H.P. to 15 H.P.

Cash or Easy Payments

HB Ball-Bearing Electric Motors are sold for cash or on easy payments, with an absolute money-back guarantee of satisfaction, under which you run no risk. Send for prices and terms, stating machinery you wish to operate, current available, etc.

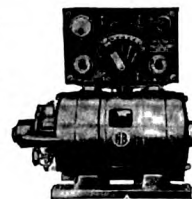
BIG PROFITS IN BATTERY CHARGING

Many HB owners are clearing \$100 to \$150 extra profit every month in charging auto storage batteries—some even more. So can you. This HB 500-Watt Charger will recharge 1 to 7 batteries at once, with current cost of only 12c to 15c per battery. Autolite pays 75c to \$1.50. Anyone can operate and make big profits.

\$15 Puts This Money-Maker in Your Garage

Balance in 9 monthly payments of \$20 each. Earnings should easily pay. Write for full particulars or send \$15 first payment with trial order. Under absolute money-back guarantee, you run no risk.

Delay Means Lost Profits
Order or Write Us Today



Hobart Brothers Company
Box G12 Troy, Ohio

Tell your customers
not to break their
backs pumping tires.

\$5.50

Jensen Tire Pump



Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

Dealers' discounts on request

The W. H. Howell Company

10 State St., Geneva, Illinois



Sells for \$4.00
Worth the price of car

The DEFENDER is the "Standard" Ford Ignition Lock

Always demand the Defender, and take no imitations. The Defender safely locks the coil-box, and is the only lock that grounds the electrical system; this makes them thief-proof. Insurance Companies require the Defender and allow 15% off on Insurance.

DEFENDER AUTO LOCK CO.
DETROIT, MICHIGAN



IRONCLAD KHAKI TWILLS

GUARANTEED FAST
WEARS LIKE LEATHER

Uncle Sam's Fighting Boys Wear IRONCLAD KHAKI

(Twill Cloth)

You men and women on the "firing lines" of industry should wear garments of this patriotic economy cloth, too. It's fast color and wears like leather.

COVERALLS OVERALLS SHIRTS and PANTS

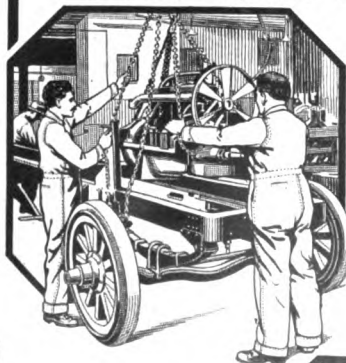
made of the genuine IRONCLAD KHAKI (the kind Uncle Sam uses); carry the yellow "Army label" like the above. LOOK for it and the Guarantee Bond in the garments before you buy.

See for yourself what Ironclad Khaki and Miss Ironclad Khaki, the special woman's overall cloth, look like. Write today for free samples.

Garments on sale by
dealers—everywhere

We are makers of the
cloth only.

Franklin Manufacturing Co.
133 Market Place, Baltimore, Md.



Automobile Dealers, Garagemen and Mechanics

Don't send your customer to another garage to have his electric system repaired. Our standard Model 302 test set will enable you to locate all troubles quickly and accurately. Price \$25.00, complete.

Our new 400 page book covering automobile electric systems and instruction given in many Aviation and Automobile Mechanics Schools is now ready for distribution. Price \$2.50, post-paid. Write today for literature and sample pages of the new book. Dealers wanted.

Phillips Engineering Co.
DAYTON, OHIO

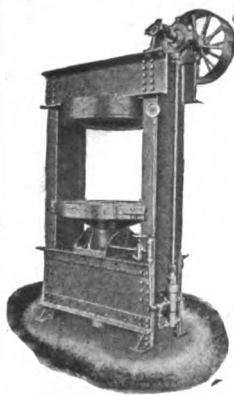
Elgin Six

"Car of the Hour"

Has gained predominance in its price class by unmatched performance. All that a motor car should be, at a price that is surprisingly low.

117-inch Wheelbase
Valve-in-head Motor

Elgin Motor Car Corp., Argo, Illinois



Tire Applying Press

Hydraulic Arbor Presses

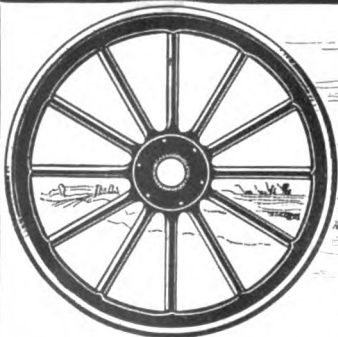
work easier
than any
others.

We make
many sizes
for many
purposes.



WRITE FOR CATALOG

Lourie Manufacturing Co.
SPRINGFIELD, ILL.



SIMPLICITY

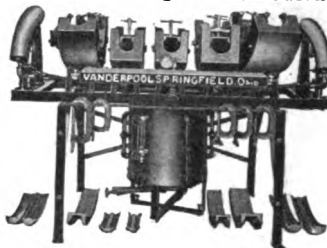
Demountable Wheels Enable That Quick Change

DEALERS—Every Ford owner is interested. Write today for literature and trade proposition.

THE SIMPLICITY DEMOUNTABLE WHEEL CO., Grand Rapids, Mich

Don't Let This Be Another "Lost Opportunity"

We urge all wide-awake, up-and-doing, ambitious men with a small savings account to go into the TIRE REPAIRING BUSINESS. Big money. We instruct you free, teach you everything,—how to begin and how to advertise.



The Vanderpool Vulcanizer

5 cavity model has capacity of \$100.00 worth of work a day and repairs tires upon the Correct principle just as they were made at the factory. Indorsed by leading tire manufacturers. Write for full particulars, testimonials and free Tire Repairing Manual.

In answering address:
Dept. R4

The Wm. Vanderpool Co., Springfield, O.

"CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar
Steel and are Heat Treated. For

STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price
\$1.50



Graham Roller Bearing Co., Coudersport, Pa.

The *Geyser* VISIBLE GASOLINE DISPENSER is the best advertisement of the first class garage.

It enables your customer to see what he is getting for his money.

It gains his confidence, good will and future patronage.

Always accurate and serviceable.

Write today for literature and prices.

The Visible Gasoline Dispenser Co.
422 First Ave. PITTSBURGH, PA.

BERMO

\$25 to \$300

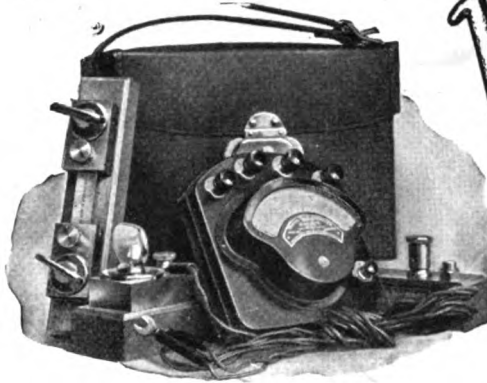
To do welding economically and profitably, you must have the proper equipment. BERMOWELDING PLANTS are made in a number of styles, embracing every purpose. Every garage and repair shop should have one.

Write for particulars and our time payment plan.

A. J. BERMOWELDING PLANTS
OMAHA, NEB.

3 to 6 months
to pay

WELDING PLANTS



Weston

Model 280 GARAGE TESTING INSTRUMENT

This is the most practical Electrical Equipment you can install. It enables you to locate electrical troubles in motor cars and apply the proper treatment to remedy them.

This Weston Instrument is considered indispensable by thousands of garage owners who use it. A very large demand has resulted. No competitive make of instrument is nearly so comprehensive in scope or dependable in operation.

In normal times we can promptly fill orders, but under present circumstances, when government demands are exceedingly heavy and our raw materials can be used only for government work, garages should either furnish us with government contract numbers, when available, or place their orders subject to preferential delivery when it is possible for us to manufacture and make shipment of commercial orders.

WESTON ELECTRICAL INSTRUMENT CO., 30 Weston Ave., Newark, N. J.
23 Branch Offices in the Larger Cities



**Keep them where
you can find them!**

Our revolving cases will prove to be the handiest for you in locating your repair parts, such as bolts, screws, cotter pins, ball bearings, etc.

These cabinets also prevent rust and loss.

Descriptive catalogue on request.

American Bolt & Screw Case Co.
DAYTON - OHIO

Revolving Cases for garage and service stations



**DON'T WAIT TILL
YOUR MOTOR
BURNS OUT BUY A**

BRUNNER SAFETY FUSE PLUG

IT WILL PROTECT YOUR AIR COMPRESSOR
MOTOR AGAINST LOW VOLTAGE, OVERLOADS
AND ALL UNUSUAL ELECTRICAL CONDITIONS.
BRUNNER MFG. CO. UTICA, N. Y.

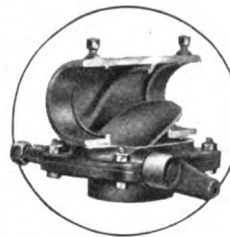
Abide by the President's Message and Conserve Your Nation's Resources



Bale Your Waste Paper—Don't Burn It—Baled Paper is worth real money. Keeps your place clean, sanitary, and the **Safety-First All Steel Balers are Fire-proof.** Prices from \$32.50 up. Write for circulars.

CHICAGO BALING PRESS COMPANY
305 South La Salle Street, CHICAGO, ILL.

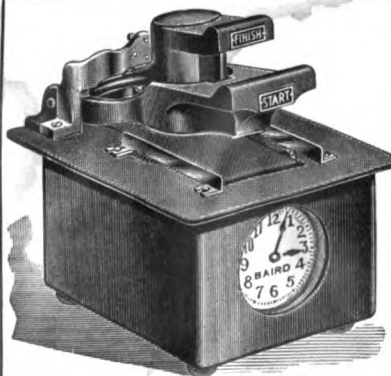
**"Tells the
motor's
secrets"**



For complete information about the G-P MUFFLER CUT-OUT write to Sales Department EDWARD A. CASSIDY CO., Inc., Madison Avenue at 40th Street, New York City

Manufacturers:
The G. Piel Co., Inc., Long Island City, N. Y.

**Put your repair charges on a
profitable basis with**



BAIRD TIMING DEVICES

Keep a check on your employees' time and learn exactly what each job costs. Automatic supervision turns losses into profits.

*Prices moderate.
Write today for booklet.*

Baird Equipment Co.
324 W. Ohio St., Chicago
Phone Superior 2071

BEARINGS

FOR

Internal-Gear Drive Axles

for trucks or truck units a specialty

Send your worn bearings for us to duplicate or repair
Orders shipped the day received



**THE
PRUYN BEARINGS
EXCHANGE**

1919 Michigan Ave. Chicago

Give the AMERICAN GARAGE AND AUTO DEALER Credit When Writing Advertisers

The Garage *and* Shop Market Place

SAVE ON ALL AUTO PARTS

The greatest stock in the Middle West. All parts of all standard makes. Quickest service. Great volume makes it possible to sell to you for—

50 to 75% Less

than NEW PARTS would cost. Only the best parts sold and backed by an iron-clad guarantee.

Our Guarantee: Absolute satisfaction or money cheerfully refunded. For instant service on parts, write, phone or wire—

Auto Wrecking Co. "We Tear 'Em Up and Sell the Pieces"
13th and Oak Kansas City, Mo.

GUARANTEED PARTS

"You must be satisfied,"
is our motto.

READ THIS GUARANTEE:

Any article purchased from us which does not, in your opinion, give satisfaction or fit, can be returned to us and your money will cheerfully be refunded.

50% to 75% less

We save you money

ORDERS SHIPPED THE DAY RECEIVED

Write us your wants

AUTO SALVAGE COMPANY, Inc.

The Originators of the Auto Salvage Business
17th and Main Sts., KANSAS CITY, MO.
2823-25 Locust St., ST. LOUIS, MO.
314-315 E. 3rd St., CINCINNATI, OHIO

RADIATORS MADE AND REPAIRED

Ship your Radiator to us today
and get it back in 24 hours.

Written guarantee with every job.

Detroit Auto Radiator Co.
180 Fifth Street Milwaukee, Wis.

SCORED CYLINDERS
Repaired by Patented Process. Fused with our silver-nickel alloy. (Eliminates Grinding.) No warping. Same pistons fit. Reshipped 24 hours after received.

L. LAWRENCE & CO.

PLANTS AT

Chicago—1522 Michigan Avenue
Detroit—1246 E. Jefferson Avenue
New York—546 W. 45th Street

Cylinder Regrinding Pistons Rings Pins

WORK, MATERIAL and
ENGINEERING are RIGHT

BUTLER MFG. CO.
1120 E. Georgia Street
INDIANAPOLIS

We have the Best Equipped
Shop in the Northwest for

**CYLINDER
GRINDING
and GEAR CUTTING**
Magnalium and Tractor Pistons

We are the Pioneers
in this line and have

OVER 500 PISTON PATTERNS
WE ALSO **"CAPITOL"** MARINE
BUILD **MOTORS**
Special Prices to the Trade

AUTO ENGINE WORKS
ST. PAUL MINN.

LOWEST PRICES on Good Serviceable PARTS

for all cars.

We are the biggest wreckers in the world. The size of our business enables us to undersell all competition.

Money cheerfully refunded if you are not satisfied.

We make a specialty of our service to the trade and can supply you with practically any parts you want from stock. Orders shipped the day received. Our stock includes motors, Bosch magnetos, coils, magneto parts, rear axles complete with wheels, differentials, tires, rims, and all other parts.

Correspondence from the trade invited.

WARSHAWSKY & CO.
Largest Car Wreckers in the World
1915 So. State St. CHICAGO, ILL.

CYLINDERS

Ground by

SUNDERLAND'S
give satisfaction

Magnalite or Cast Iron
PISTONS

Special Prices on Ford Jobs
Regrinding — New Pistons

Write for quotations

SUNDERLAND MACHINERY CO.
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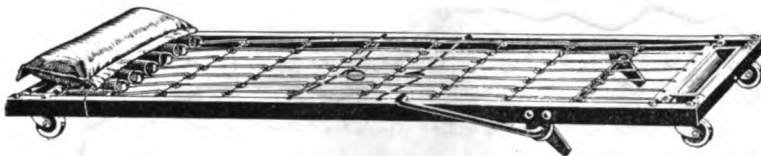
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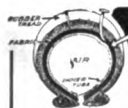
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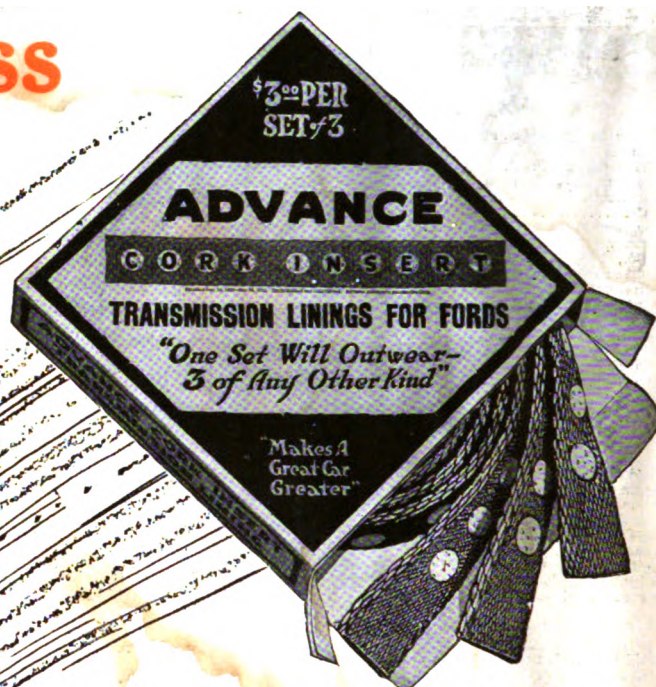
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The Graham Roller Bearing Co., Coudersport, Pa.

A		K	
Adams & Elting	—	Kennedy Car Liner & Bag Co.	51
Advance Automobile Accessor-		Keys Piston Ring Co.	—
ries Corp.	54	Kimball Tire & Rubber Co.	—
American Accessories Co.	51	L	
American Bolt & Screw Case		Lawrence & Co., L.	50
Co.	49	Lourie Mfg. Co.	48
American Machine Products Co.	44	M	
American Oil Pump & Tank		McDaniel Rubber Co., Leo.	43
Co., The	—	Marbohm Wagon Co.	45
American Technical Society...	39	Marvel Carburetor Co.	42
Aske Automatic Voltage Regu-		Marvel Machinery Co.	31
lator Co.	—	Miami Trailer Co.	4
Atlas Auto Supply Co.	—	Milwaukee Tank Works.	—
Atwell, Gordon C.	50, 51	N	
Auto Cape Top Co.	50	National Cash Register Co.	28
Auto Engine Works.	50	National Rubber Filler Co.	29
Auto Salvage Co.	50	National Wire Wheel Works.	37
Auto Spring Repair Co.	51	New Era Spring and Specialty	
Auto Wrecking Co.	50	Co.	42
B		New York Coil Co.	53
Baird Equipment Co.	49	New York Lubricating Oil Co.	46
Bearings Service Co.	—	No-Leak-O Piston Ring Co.	—
Berno Co., A. J.	48	Norma Company of America,	
B. & M. Mfg. Co.	—	The	6
Boe Co., H. M.	45	O	
Brunner Mfg. Co.	49	Olympian Motors Co.	—
Buettner Co., Chas. H.	51	P	
Butler Mfg. Co.	50	Paro, H. G., Co.	—
Buffum Tool Co.	47	Phillips Engineering Co.	48
C		Pondelick Bros.	44
Cassidy Co., Edward A.	49	Pruyn Ball Bearing Works.	49
Catelain, Andre G.	50	R	
Chicago Baling Press Co.	49	Reliance Co.	43
Chicago Solder Co.	41	Redden Motor Truck Co.	—
Commonwealth Edison Co.	—	Romort Mfg. Co.	35
Curtis Pneumatic Machinery		S	
Co.	27	St. Paul Welding & Mfg. Co.	50
D		Scaife & Sons Co., Wm. R.	51
Dearborn Truck Co.	3	Schaler Co., C. A.	Front Cover
Defender Auto Lock Co.	47	Schrader's Son, Inc., A.	44
Denby Motor Truck Co.	7	Simplicity Wheel Co.	48
Detroit Auto Radiator Co.	50	Spencer's Sons, I. S.	51
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Dunton Co., M. W.	33	Standard Oil Co., of Indiana.	8
E		States Chemical Co.	5
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Elgin Motor Car Corp.	48	Storm Mfg. Co.	45
Ever-Tight Piston Ring Co.	4	Sturr-Bullard Motor Co.	—
F		Sunderland Machinery & Sup-	
Federal Sign System (Electric) —		ply Co.	50
Fluxume Sign Co.	Back Cover	T	
Forbes, J. P.	51	Tractor-Train Co.	—
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G		U	
Ganschow Co., William.	46	United Engine & Mfg. Co.	—
Garden City Spring Works.	51	Universal Mfg. & Sales Co.	53
Gill Mfg. Co.	41	V	
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Graham Roller Bearing Co.,		Visible Gasoline Dispenser Co.	48
The	48	W	
Greb Co., The	—	Wagner Specialty Co.	51
Greer College of Motoring.	50	Warshawsky & Co.	50
H		Webber & Co., P. H.	48
Haney & Co., J. H.	43	Western Electric Co.	5
Harton & Co., Inc., Thos. J.	—	Weston Electrical Instrument	
Harvey Spring & Forging Co.	37	Co.	49
Haywood Tire & Equipment Co.	—	White Star Refining Co.	—
Hobart Bros.	47	Willard Co., The.	—
Holmes & Bros., Inc., Robert.	44	Williams Fdry. & Machine Co.	—
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I		Zinke Co.	3
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A world's record! That's what Cork Insert made when it won a place on hundreds of thousands of Fords within a few short months. It broke all selling records because it gave a better performance than anything else ever produced—*smoother action—a safer brake—and longer wear.*

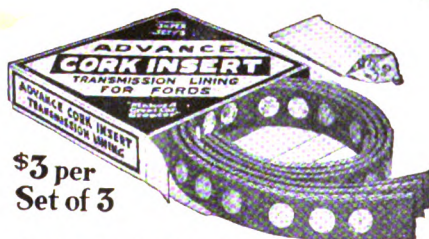
Don't forget that it is *merit* that has put Cork Insert over. There is no magic in the name or qualities of Cork. It has wonderful frictional properties. But by itself, it is utterly valueless as lining material.

The secret of Cork Insert Service and its success is the Cork Insert Way of combining cork and lining. It's a patented way. No other lining does the work equally well.

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Advance Automobile Accessories Corp.

Dept. M7-1, 56 East Randolph Street, CHICAGO



Rockies West, \$3.25—Canadian Price, \$4.50

Smooth Action, Sure Brake, Long Wear

—that's the service that Cork Insert Transmission Lining gives. When you apply the brake, the corks hit the brake drum first. They compress gradually and ease the load down to the fabric. The light pressure required, and velvety smooth action of the buttons of cork coming in contact with the drums, means such long wear that Cork Inserts are far the cheapest in the long run.



Canadian Prices: 1917-18 model, \$1.50; earlier models \$1.25

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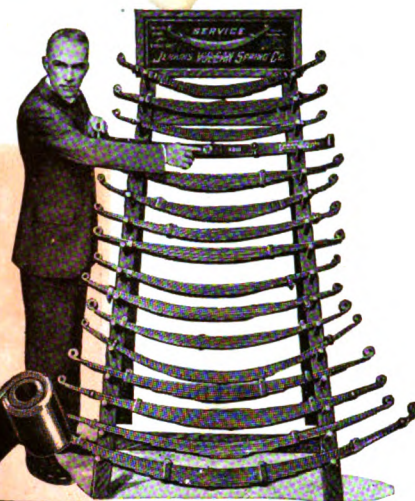
Retards overheating. Most motor trouble is caused from overheating. This is due in no little degree to loss of driving power—estimated as high as 25% to 50%—because ordinary fan belts slip and stretch. Cork Insert Fan Belts stop the slipping. It doesn't have to be run tight to prevent slipping, like ordinary belts. This, plus its durable construction, means extra long wear and economy. Cork Insert Fan Belts outlast all others—hence economical.

CORK INSERT

Spring Service for A Nation.

VULCAN QUALITY

The Replacement Spring



**Sign and Display Rack
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The Display rack and Service Sign is furnished **Free** with the first order, including appropriate advertising helps.

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Performance of VULCAN Springs on their cars has convinced them of the Superiority of VULCAN.

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are profiting by the demand created through national advertising, combined with supreme quality of VULCAN Springs and convenience of VULCAN Service.

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Become a VULCAN Dealer and enjoy the benefits of a ready made market.

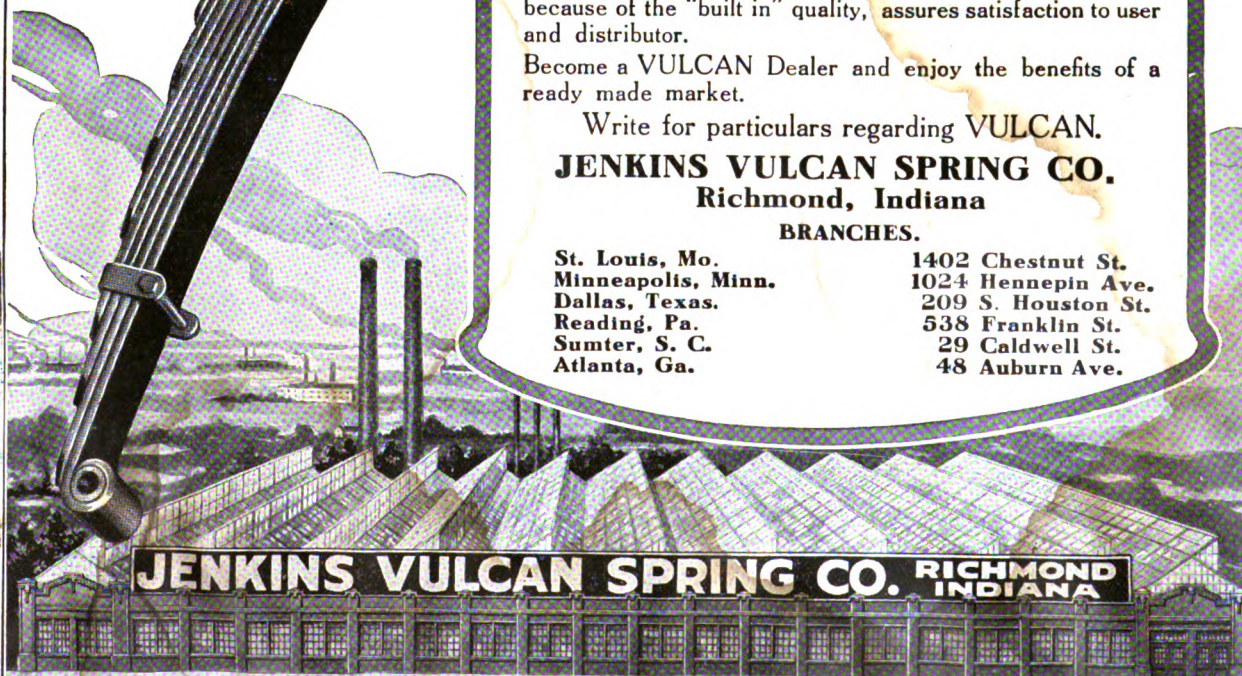
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THE CHEMICAL THAT
FIRE CHIEFS RECOMMEND

Alone On The Road

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"I stopped the car, grabbed my Fire-Choke out of its holder, and threw a handful into the base of the flame with a forceful, sweeping motion just like the directions say.

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It is now being marketed in a large way for the first time and, therefore, there is a splendid chance for dealers to stock now and take advantage of the demand.

Two sizes, retailing at \$3.50 and \$5.00

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Niagara St. and Auburn Ave., BUFFALO, N. Y.





